

REPORT NO. 207-KAR-04-005

**SAFETY COMPLIANCE TESTING
FOR FMVSS 207**

SEATING SYSTEMS

2004 SUZUKI
VERONA
4-DOOR SEDAN

NHTSA NO. C40502

PREPARED BY:
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July 2, 2004

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ASSURANCE
OFFICE OF VEHICLE SAFETY COMPLIANCE
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TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1	Purpose of Compliance Test	1
2	Compliance Test Procedure and Data Summary	2
3	Compliance Test Data	4
4	Noncompliance Data (if applicable)	--

Appendix

A	Photographs
B	Data Plots
C	Test Equipment List and Calibration Information

LIST OF DATA SHEETS

<u>Data Sheet</u>		<u>Page</u>
1	Test Vehicle Receiving Inspection	5
2	Seating System Test Results	6
3	Seat Back Angles	8
4	Report of Vehicle Condition at the Completion of Testing	9

LIST OF PHOTOGRAPHS

<u>Figure</u>		<u>Page</u>
A-1	Left Front, (as Received)	A-1
A-2	Left Side, (as Received)	A-2
A-3	Right Rear, (as Received)	A-3
A-4	Right Side, (as Received)	A-4
A-5	Vehicle Certification Label	A-5
A-6	Vehicle Tire Label	A-6
A-7	Vehicle Mounted in Test Fixture	A-7
A-8	Vehicle Mounted in Test Fixture	A-8
A-9	Vehicle Mounted in Test Fixture	A-9
A-10	Vehicle Mounted in Test Fixture	A-10
A-11	Aft Moment on Seat Frame and Adjusters, Driver's Side, Pre-Test	A-11
A-12	Aft Moment on Seat Frame and Adjusters, Driver's Side, Post-Test	A-12
A-13	Aft Moment on Seat Frame and Adjusters, Passenger's Side, Pre-Test	A-13
A-14	Aft Moment on Seat Frame and Adjusters, Passenger's Side, Post-Test	A-14
A-15	Aft Load on Seat Frame and Adjusters, Driver's Side, Pre-Test	A-15
A-16	Aft Load on Seat Frame and Adjusters, Driver's Side, Post-Test	A-16
A-17	Aft Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test	A-17
A-18	Aft Load on Seat Frame and Adjusters, Passenger's Side, Post-Test	A-18
A-19	Forward Load on Seat Frame and Adjusters, Driver's Side, Pre-Test	A-19
A-20	Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test	A-20
A-21	Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test	A-21
A-22	Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test	A-22
A-23	207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Pre-Test	A-23
A-24	207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test	A-24
A-25	207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Pre-Test	A-25
A-26	207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test	A-26
A-27	207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test	A-27
A-28	207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test	A-28
A-29	207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test	A-29
A-30	207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test	A-30
A-31	Forward Load on Seat Back and Seat Cushion, Driver Side Rear, Pre-Test	A-31

LIST OF PHOTOGRAPHS (Continued)

<u>Figure</u>		<u>Page</u>
A-32	Forward Load on Seat back and Seat cushion, Driver's Side Rear, Post-Test	A-32
A-33	Forward Load on Seat Back and Seat Cushion, Passenger's Side Rear, Pre-Test	A-33
A-34	Forward Load on Seat Back and Seat Cushion, Passenger's Side Rear, Post-Test	A-34
A-35	Floor Pan Anchors, Left Front Seat Overall, Pre-Test	A-35
A-36	Floor Pan Anchors, Left Front Seat Overall, Post-Test	A-36
A-37	Seat Anchors, Left front Seat Overall, Pre-Test	A-37
A-38	Seat Anchors, Left Front Seat Overall, Post-Test	A-38
A-39	Floor Pan Anchor, Left Front Seat, Pre-Test	A-39
A-40	Floor Pan Anchor, Left Front Seat, Post-Test	A-40
A-41	Seat Anchor, Left Front Seat, Pre-Test	A-41
A-42	Seat Anchor, Left Front Seat, Post-Test	A-42
A-43	Floor Pan Anchor, Left Front Seat, Pre-Test	A-43
A-44	Floor Pan Anchor, Left Front Seat, Post-Test	A-44
A-45	Seat Anchor, Left Front Seat, Pre-Test	A-45
A-46	Seat Anchor, Left Front Seat, Post-Test	A-46
A-47	Floor Pan Anchor, Left Front Seat, Pre-Test	A-47
A-48	Floor Pan Anchor, Left Front Seat, Post-Test	A-48
A-49	Seat Anchor, Left Front Seat, Pre-Test	A-49
A-50	Seat Anchor, Left Front seat, Post-Test	A-50
A-51	Floor Pan Anchor, Left Front Seat, Pre-Test	A-51
A-52	Floor Pan Anchor, Left Front Seat, Post-Test	A-52
A-53	Seat Anchor, Left Front Seat, Pre-Test	A-53
A-54	Seat Anchor, Left Front Seat, Post-Test	A-54
A-55	Floor Pan Anchors, Right Front Seat Overall, Pre-Test	A-55
A-56	Floor Pan Anchors, Right Front Seat Overall, Post-Test	A-56
A-57	Seat Anchors, Right Front Seat Overall, Pre-Test	A-57
A-58	Seat Anchors, Right Front Seat Overall, Post-Test	A-58
A-59	Floor Pan Anchor, Right Front Seat, Pre-Test	A-59
A-60	Floor Pan Anchor, Right Front Seat, Post-Test	A-60
A-61	Seat Anchor, Right Front Seat, Pre-Test	A-61
A-62	Seat Anchor, Right Front Seat, Post-Test	A-62

LIST OF PHOTOGRAPHS (Continued)

<u>Figure</u>		<u>Page</u>
A-63	Floor Pan Anchor, Right Front Seat, Pre-Test	A-63
A-64	Floor Pan Anchor, Right Front Seat, Post-Test	A-64
A-65	Seat Anchor, Right Front Seat, Pre-Test	A-65
A-66	Seat Anchor, Right Front Seat, Post-Test	A-66
A-67	Floor Pan Anchor, Right Front Seat, Pre-Test	A-67
A-68	Floor Pan Anchor, Right Front Seat, Post-Test	A-68
A-69	Seat Anchor, Right Front Seat, Pre-Test	A-69
A-70	Seat Anchor, Right Front Seat, Post-Test	A-70
A-71	Floor Pan Anchor, Right Front Seat, Pre-Test	A-71
A-72	Floor Pan Anchor, Right Front Seat, Post-Test	A-72
A-73	Seat Anchor, Right Front Seat, Pre-Test	A-73
A-74	Seat Anchor, Right Front Seat, Post-Test	A-74
A-75	Floor Pan Anchors, Rear Set, Seat Cushion Overall, Pre-Test	A-75
A-76	Floor Pan Anchors, Rear Seat, Seat Cushion Overall, Post-Test	A-76
A-77	Seat Anchors, Rear Seat, Seat Cushion Overall, Pre-Test	A-77
A-78	Seat Anchors, Rear Seat, Seat Cushion Overall, Post-Test	A-78
A-79	Floor Pan Anchor, Rear Seat, Seat Cushion, Pre-Test	A-79
A-80	Floor Pan Anchor, Rear Seat, Seat Cushion, Post-Test	A-80
A-81	Seat Anchor, Rear Seat, Seat Cushion, Pre-Test	A-81
A-82	Seat Anchor, rear Seat, seat Cushion, Post-Test	A-82
A-83	Floor Pan Anchor, Rear Seat, Seat Cushion, Pre-Test	A-83
A-84	Floor Pan Anchor, Rear Seat, Seat Cushion, Post-Test	A-84
A-85	Seat Anchor, Rear Seat, Seat Cushion, Pre-Test	A-85
A-86	Seat Anchor, Rear Seat, Seat Cushion, Post-Test	A-86
A-87	Floor Pan Anchors, Rear Seat, Left Seat Back Overall, Pre-Test	A-87
A-88	Floor Pan Anchors, Rear Seat, Left Seat Back Overall, Post-Test	A-88
A-89	Seat Anchors, Rear Seat, Left Seat Back Overall, Pre-Test	A-89
A-90	Seat Anchors, Rear Seat, Left Seat Back Overall, Post-Test	A-90
A-91	Floor Pan Anchor, Rear Seat, Left Seat Back, Pre-Test	A-91
A-92	Floor Pan Anchor, Rear Seat, Left Seat Back, Post-Test	A-92
A-93	Seat Anchor, Rear Seat, Left Seat Back, Pre-Test	A-93

LIST OF PHOTOGRAPHS (Continued)

<u>Figure</u>		<u>Page</u>
A-94	Seat Anchor, Rear Seat, Left Seat Back, Post-Test	A-94
A-95	Floor Pan Anchor, Rear Seat, Left Seat Back, Pre-Test	A-95
A-96	Floor Pan Anchor, Rear Seat, Left Seat Back, Post-Test	A-96
A-97	Seat Anchor, Rear Seat, Left Seat Back, Pre-Test	A-97
A-98	Seat Anchor, Rear Seat, Left Seat Back, Post-Test	A-98
A-99	Floor Pan Anchor, Rear Seat, Left Seat Back, Pre-Test	A-99
A-100	Floor Pan Anchor, Rear Seat, Left Seat Back, Post-Test	A-100
A-101	Seat Anchor, Rear Seat, Left Seat Back, Pre-Test	A-101
A-102	Seat Anchor, Rear Seat, Left Seat Back, Post-Test	A-102
A-103	Floor Pan Anchors, Rear Seat, Right Seat Back Overall, Pre-Test	A-103
A-104	Floor Pan Anchors, Rear Seat, Right Seat Back Overall, Post-Test	A-104
A-105	Seat Anchors, Rear Seat, Right Seat Back Overall, Pre-Test	A-105
A-106	Seat Anchors, Rear Seat, Right Seat Back Overall, Post-Test	A-106
A-107	Floor Pan Anchor, Rear Seat, Right Seat Back, Pre-Test	A-107
A-108	Floor Pan Anchor, Rear Seat, Right Seat Back, Post-Test	A-108
A-109	Seat Anchor, Rear Seat, Right Seat Back, Pre-Test	A-109
A-110	Seat Anchor, Rear Seat, Right Seat Back, Post-Test	A-110
A-111	Floor Pan Anchor, Rear Seat, Right Seat Back, Pre-Test	A-111
A-112	Floor Pan Anchor, Rear Seat, Right Seat Back, Post-Test	A-112
A-113	Seat Anchor, Rear Seat, Right Seat Back, Pre-Test	A-113
A-114	Seat Anchor, Rear Seat, Right Seat Back, Post-Test	A-114
A-115	Floor Pan Anchor, Rear Seat, Right Seat Back, Pre-Test	A-115
A-116	Floor Pan Anchor, Rear Seat, Right Seat Back, Post-Test	A-116
A-117	Seat Anchor, Rear Seat, Right Seat Back, Pre-Test	A-117
A-118	Seat Anchor, Rear Seat, Right Seat Back, Post-Test	A-118

LIST OF DATA PLOTS

<u>Data Plot</u>	<u>Page</u>
B-1 Driver Aft Moment Load	B-1
B-1 Passenger Aft Moment Load	B-1
B-2 Drive Seat Assembly Aft Seat Frame and Adjusters	B-2
B-2 Passenger Seat Assembly Aft Seat Frame and Adjusters	B-2
B-3 Driver Seat Assembly Forward seat Frame and Adjusters	B-3
B-3 Passenger Seat Assembly Forward seat Frame and Adjusters	B-3
B-4 Driver Lap Belt Force/Driver Shoulder Belt Force	B-4
B-4 Passenger Lap Belt Force/Passenger Shoulder Belt Force	B-4
B-5 Driver Seat Force	B-5
B-5 Passenger Seat Force	B-5
B-6 Left Rear / Right Rear Fwd Seat Back	B-6
B-6 Rear Seat Cushion	B-6

SECTION 1
PURPOSE OF COMPLIANCE TEST

1. PURPOSE OF COMPLIANCE TEST

Tests were conducted on a 2004 Saturn Ion 4-door Sedan, manufactured by Saturn Corporation, to determine compliance with FMVSS 207, "Seating Systems". The purpose of this standard is to reduce the number of deaths and injuries that may be caused by the failure of seats, their attachment hardware, and their installation when said failure results from the forces on the seat in a vehicle impact.

All tests were conducted based on the current National Highway Traffic Safety Administration (NHTSA), Office of Vehicle Safety Compliance (OVSC) Laboratory Procedures, TP-207-09, dated June 18, 1992, and corresponding KARCO Engineering, LLC test procedure KTP-207, dated August 2, 2002. Detailed procedures for receiving, inspecting, testing and reporting of test results are described in the test procedures and are not repeated in this report.

This report is organized in sections containing pertinent test information and data tables as follows:

- Section 2 - Compliance Test Procedure and Data Summary
- Section 3 - Compliance Test Data
- Section 4 - Noncompliance Data (if applicable)
- Appendix A - Photographs
- Appendix B - Data Plots
- Appendix C - Test Equipment List and Calibration Information

SECTION 2

COMPLIANCE TEST PROCEDURE and DATA SUMMARY

2. COMPLIANCE TEST PROCEDURE AND DATA SUMMARY

A 2004 Saturn Ion 4-door Sedan was subjected to FMVSS 207 compliance testing on July 15 through August 18, 2004. All tests were conducted at KARCO Engineering, LLC in Adelanto, California. Summary data is shown on Data Sheet No. 2. The following tests were performed:

- Receiving inspection
- Aft moment tests on front seat backs
- Aft load tests on front seat frames and adjusters
- Forward load tests on front seat frames and adjusters
- Forward load tests on front set frames and adjusters, including FMVSS 210 Loads
- Forward load test on rear seat cushions and seat backs

The tests were conducted per the FMVSS 207 test procedure. The significant aspects of the test procedure are described in the following paragraphs.

2.1 Test Vehicle Inspection. The test vehicle was inspected to verify that all seat, restraint systems and seat belt assembly anchorage systems are complete and the seat adjusting mechanisms are working properly.

2.2 Test Vehicle Preparation and Pre-test Measurements. The test vehicle was securely mounted to the test fixture and connected to the appropriate number of hydraulic actuators. Lateral spacing of the individual seat anchorages were measured and all other angular and dimensional measurements were verified to be in compliance with the requirements of the subject safety standards. The components were weighed and their centers of gravity determined.

2.3 Static Load Tests-General Performance Requirements.

When tested in accordance with S5, each occupant seat, other than a side-facing seat or a passenger seat on a bus, shall withstand the following forces:

- (a) In any position to which it can be adjusted — 20 times the weight of the seat applied in a forward longitudinal direction;

(Continued on next page)

2. (Continued)

- (b) In any position to which it can be adjusted — 20 times the weight of the seat applied in a rearward longitudinal direction;
- (c) For a seat belt assembly attached to the seat — the force specified in subparagraph (a), if it is a forward facing seat, or subparagraph (b), if it is a rearward facing seat, in each case applied simultaneously with the forces imposed on the seat by the seat belt assembly when it is loaded in accordance with section S4.2 of Federal Motor Vehicle Safety Standard No. 210; and
- (d) In its rearmost position — a force that produces a 3,300 inch-pound moment about the seating reference point (SRP) for each designated seating position (DSP) that the seat provides, applied to the upper cross-member of the seat back or the upper seat back, in a rearward longitudinal direction for forward-facing seats and in a forward longitudinal direction for rearward-facing seats.
- (e) To meet FMVSS 210 requirements, the anchorages, attachment hardware, and attachment bolts for all Type 2 and automatic seat belt assemblies that are installed to comply with Standard No. 208 (49 CFR 571.208) shall withstand 3,000 pound forces when tested in accordance with S5.2.

SECTION 3
COMPLIANCE TEST DATA

3. COMPLIANCE TEST DATA

The results of FMVSS 207 compliance tests that were conducted on the 2004 Saturn Ion 4-door Sedan on July 15, through August 18, 2004, to determine compliance with FMVSS 207, "Seating Systems" are presented in this section. No performance failures were identified for the vehicle tested.

TEST VEHICLE RECEIVING INSPECTION

VEHICLE			
YEAR	2004	MAKE	Saturn
MODEL	Ion	BODY STYLE	4-door Sedan
NHTSA NO.	C40104	VIN	1G8AF52F94Z129223
BUILD DATE	09/03	TEST DATE	07/15/04 – 08/18/04
TEST LABORATORY		KARCO ENGINEERING, L.L.C.	

- | | | | |
|----|---|------------------|--|
| 1. | First compliance test by laboratory for this vehicle is S207 test. | | |
| | Yes | <u> X </u> | No (Go to item 2) |
| | <u> X </u> | 1.1 | Label test vehicle with NHTSA Number |
| | <u> X </u> | 1.2 | Verify all options on the "window sticker" are present on the vehicle |
| | <u> X </u> | 1.3 | Verify tires and wheel rims are new and the same as listed |
| | <u> X </u> | 1.4 | Verify there are no dents or other interior or exterior flaws |
| | <u> X </u> | 1.5 | Verify the glove box contains an owner's manual, warranty document, consumer information, and extra keys |
| | <u> X </u> | 1.6 | Verify the vehicle is equipped with the proper fuel filler cap |
| | <u> X </u> | 1.7 | If the vehicle has been delivered from the dealer, verify the vehicle has been properly prepared and is in running condition |
| 2. | Verify seat adjusters are working | | |
| | <u> X </u> Yes | <u> </u> No | |
| 3. | Verify there is a seat belt at each seating position | | |
| | <u> X </u> Yes | <u> </u> No | |
| 4. | Without disturbing the integrity of each seat belt and anchorage, verify that each seat belt is attached to the anchorage. For seat belts that are attached to the seat, also verify the seats are attached to the seat anchors and the seat anchors are attached to the vehicle. | | |
| | <u> X </u> Yes | <u> </u> No | |

RESULTS OR RECEIVING INSPECTION:

PASS -- X

FAIL -- _____

CONDITIONAL -- _____

REMARKS:

RECORDED BY: MARK A. KRATZKE DATE: _____

APPROVED BY: MATTHEW A. IVORY DATE: _____

DATA SHEET NO. 2
SEATING SYSTEM TEST RESULTS

VEHICLE			
YEAR	2004	MAKE	Saturn
MODEL	Ion	BODY STYLE	4-door Sedan
NHTSA NO.	C40104	VIN	1G8AF52F94Z129223
BUILD DATE	07/03	TEST DATE	July 01, 2004
TEST LABORATORY	KARCO ENGINEERING, L.L.C.		

LEGEND: Wa - Weight of Seat Assembly
 Wb - Weight of Seat Back
 Wc - Weight of Seat Cushion
 Z - Distance from Seat SRP to Uppermost Crossmember = 18.0 "

FOR FRONT BUCKET SEATS - - LEFT SIDE

COMPONENT	LOAD DIRECTION	COMPONENT WEIGHT (lbs)	REQUIRED LOAD (lbs)	ACTUAL LOAD (lbs)	PEAK MOMENT (in-lbs)	ATTACHMENT (PASS/FAIL)
Seat Back	Forward	Wb = N/A	20 x Wb = N/A	N/A	N/A	N/A
Seat Assy.	Forward	Wa = 50	20 x Wa = 1000	993.3	N/A	PASS
	Rearward	Wa = 50	20 x Wa = 1000	992.9	N/A	PASS
Seat Back Moment	Rearward	N/A	3275 in-lb/Z	178.4	3211.2	PASS

FOR FRONT BUCKET SEATS - - RIGHT SIDE

COMPONENT	LOAD DIRECTION	COMPONENT WEIGHT (lbs)	REQUIRED LOAD (lbs)	ACTUAL LOAD (lbs)	PEAK MOMENT (in-lbs)	ATTACHMENT (PASS/FAIL)
Seat Back	Forward	Wb = N/A	20 x Wb = N/A	N/A	N/A	N/A
Seat Assy.	Forward	Wa = 44	20 x Wa = 880	877.5	N/A	PASS
	Rearward	Wa = 44	20 x Wa = 880	877.5	N/A	PASS
Seat Back Moment	Rearward	N/A	3275 in-lb/Z	178.8	3218.4	PASS

(Continued on next page)

DATA SHEET NO. 2 (Continued)

FOR FRONT BUCKET SEATS -- COMBINED

COMPONENT	LOAD DIRECTION	COMPONENT WEIGHT (lbs)	REQUIRED LOAD (lbs)	ACTUAL LOAD (lbs)	ATTACHMENT (PASS/FAIL)
Driver Lap Belt	Forward	N/A	3,000 lbs, -10, -50	2969.6	PASS
Driver Shoulder Belt	Forward	N/A	3,000 lbs, -10, -50	2967.2	PASS
Center Lap Belt	Forward	N/A	5,000 lbs, -10, -50	N/A	N/A
Passenger Lap Belt	Forward	N/A	3,000 lbs, -10, -50	2996.4	PASS
Passenger Shoulder Belt	Forward	N/A	3,000 lbs, -10, -50	2976.3	PASS
Driver Seat Assembly	Forward	Wa = 54	20 x Wa = 1080	992.6	PASS
Passenger Seat Assembly	Forward	Wa = 42	20 x Wa = 840	877.1	PASS

LEGEND: Wa - Weight of Seat Assembly
 Wb - Weight of Seat Back
 Wc - Weight of Seat Cushion
 Z - Distance from Seat SRP to Uppermost Crossmember = N/A

FOR REAR SEATS --

COMPONENT	LOAD DIRECTION	COMPONENT WEIGHT (lbs)	REQUIRED LOAD (lbs)	ACTUAL LOAD (lbs)	PEAK MOMENT (in-lbs)	ATTACHMENT (PASS/FAIL)
Cushion	Forward	Wc = 12	20 x Wc = 240	231.6	N/A	PASS
Left Back	Forward	Wb = 14	20 x Wb = 280	275.1	N/A	PASS
Right Back	Forward	Wb = 26	20 x Wb = 520	517.2	N/A	PASS

COMMENTS:

RECORDED BY: MARK A. KRATZKE DATE: 07/02/04

APPROVED BY: MATTHEW A. IVORY DATE: 07/02/04

DATA SHEET NO. 3
SEAT BACK ANGLES

VEHICLE			
YEAR	2004	MAKE	SUZUKI
MODEL	VERONA	BODY STYLE	4-door Sedan
NHTSA NO.	C40502	VIN	1G8AF52F94Z129223
BUILD DATE	07/03	TEST DATE	July 01, 2004
TEST LABORATORY	KARCO ENGINEERING, L.L.C.		

LAP BELT ANCHORAGES:

SEAT	SEATING POSITION	SPECIFIED ANGLE RANGE ABOVE HORIZONTAL	MEASURED ANGLE		DOES BELT SECURELY FIT ON PELVIS?
			I/B	O/B	
FRONT	Left	30 to 75 degrees	41	25	YES
	Center	30 to 75 degrees	N/A	N/A	N/A
	Right	30 to 75 degrees	38	18	YES
REAR	Left	30 to 75 degrees	37	40	YES
	Center	30 to 75 degrees	48	48	YES
	Right	30 to 75 degrees	48	38	YES

SHOULDER BELT ANCHORAGES:

SEAT	SEATING POSITION	SPECIFIED ANGLE RANGE ABOVE OR BELOW HORIZONTAL	MEASURED ANGLE
FRONT	Left	0 – 80 degrees above	11°
		0 – 40 degrees below	N/A
	Right	0 – 80 degrees above	7°
		0 – 40 degrees below	N/A
REAR	Left	0 – 80 degrees above	N/A
		0 – 40 degrees below	6°
	Center	0 – 80 degrees above	N/A
		0 – 40 degrees below	11°
	Right	0 – 80 degrees above	N/A
		0 – 40 degrees below	6°

RECORDED BY: MARK A. KRATZKE DATE: 07/02/04

APPROVED BY: MATTHEW A. IVORY DATE: 07/02/04

DATA SHEET NO. 4**REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING**

The following vehicle has been subjected to compliance testing for FMVSS No. 207

VEHICLE			
NHTSA NO.	C40502	TEST DATE	July 01, 2004
CONTRACT NO.	DTNH22-01-C-31025	VIN	1G8AF52F94Z129223
SEAT CONFIGURATION			
VEHICLE OR SEAT MANUFACTURER		SUZUKI MOTOR COMPANY	
TEST LABORATORY		KARCO ENGINEERING, L.L.C.	

The vehicle was inspected upon arrival at the laboratory for the test and found to contain all of the equipment listed below. All variances have been reported within 2 working days of vehicle arrival, by letter, to the NHTSA Industrial Property Manager (NAD-30), with a copy to the OVSC COTR. The vehicle is again inspected, after the above test has been conducted, and all changes are noted below. The final condition of the vehicle is also noted in detail.

TEST VEHICLE INFORMATION			
Manufacturer	SUZUKI MOTOR COMPANY	VIN	1G8AF52F94Z129223
Manufacturing Date	07/03	Delivery Date	04/06/04
Dealer	LANCASTER AUTO GROUP	NHTSA No.	C40502
Odometer Reading (mi.)	64	Fuel Type	GAS
Engine Displacement	2.5 LITERS	Cylinders	4
Transmission	AUTOMATIC	Final Drive	FRONT
Engine Placement	TRANSVERSE	Color	TEAL
Tire Press./Max. Cap. Front	44 psi	Cold Tire Press. Front	30 psi
Tire Press./Max. Cap. Rear	44 psi	Cold Tire Press. Rear	30 psi
Recommend Tire Size	P205/65 R15	Type of Spare	P205/65 R15
Tire Size on Vehicle	P205/65 R15	Manufacturer	KUMHO
GVWR	4279	Cargo Capacity	898
GAWR Front	2165	GAWR Rear	2114
Air Conditioning	YES	Power Steering	YES
Power Brakes	YES	AM/FM/Cassette	YES
Disc Brakes (Front)	YES	Disc Brakes (Rear)	YES
Power Windows	YES	Tilt Steering	YES
Anti-lock Brakes (ABS)	NO	Power Seats	NO
Driver Airbag	YES	Passenger Airbag	YES

Test Vehicle Condition: **FRONT OF VEHICLE WAS REMOVED, SEATS WERE TESTED.**

RECORDED BY: MARK A. KRATZKE DATE: 07/02/04

APPROVED BY: MATTHEW A. IVORY DATE: 07/02/04

APPENDIX A
PHOTOGRAPHS

A-1

207-10453-04-055

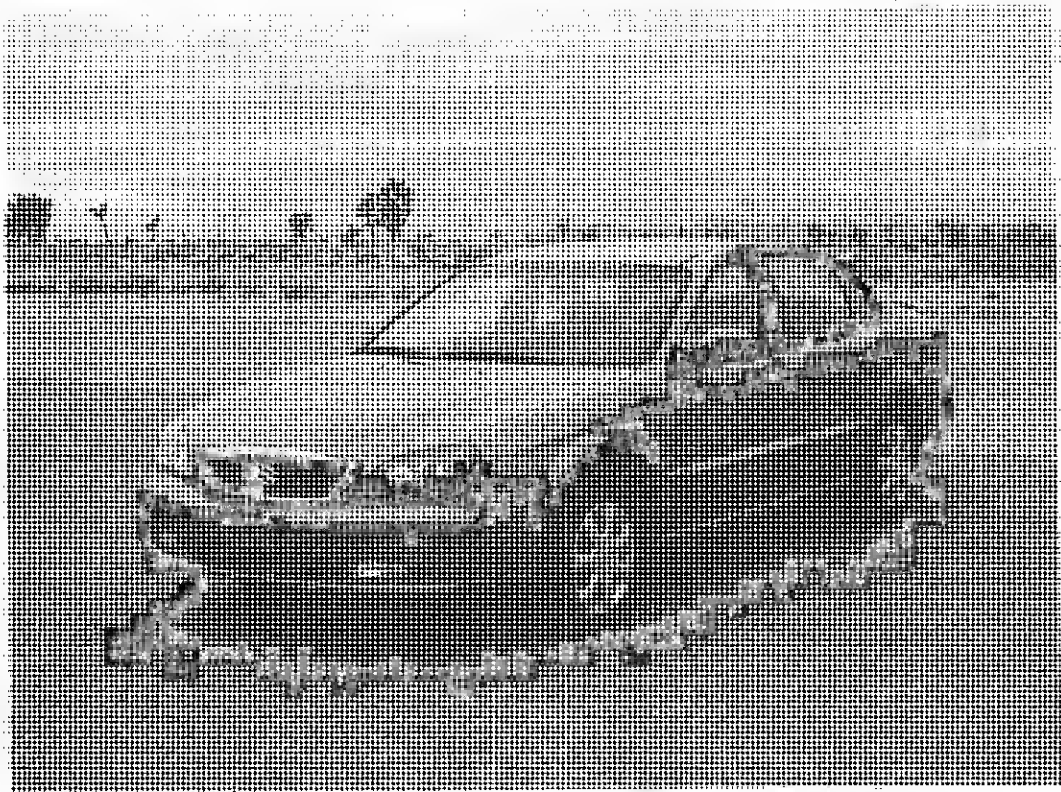


Figure A-1: Left Front (as Received)

A-2

207-10453-04-059



Figure A-2: Left Side (as Received)

A-3

207-KAR-02-003



Figure A-3: Right Rear (as Received)

A-4

207-KAR-02-003

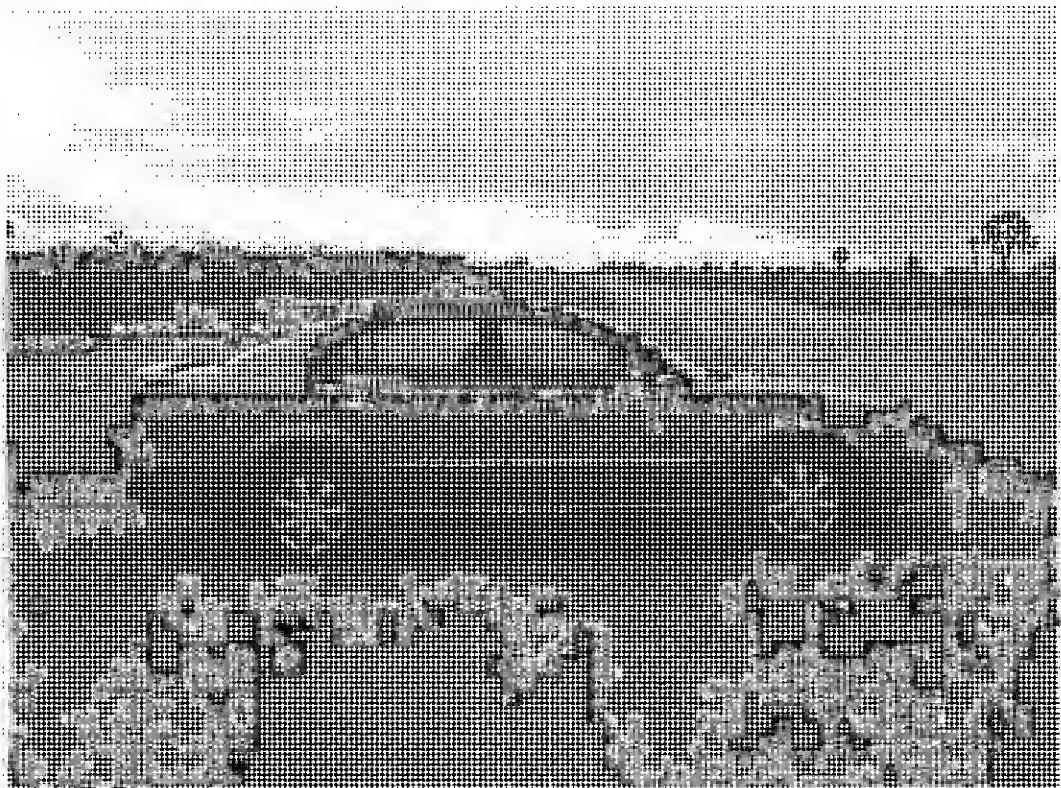


Figure A-4: Right Side (as Received)

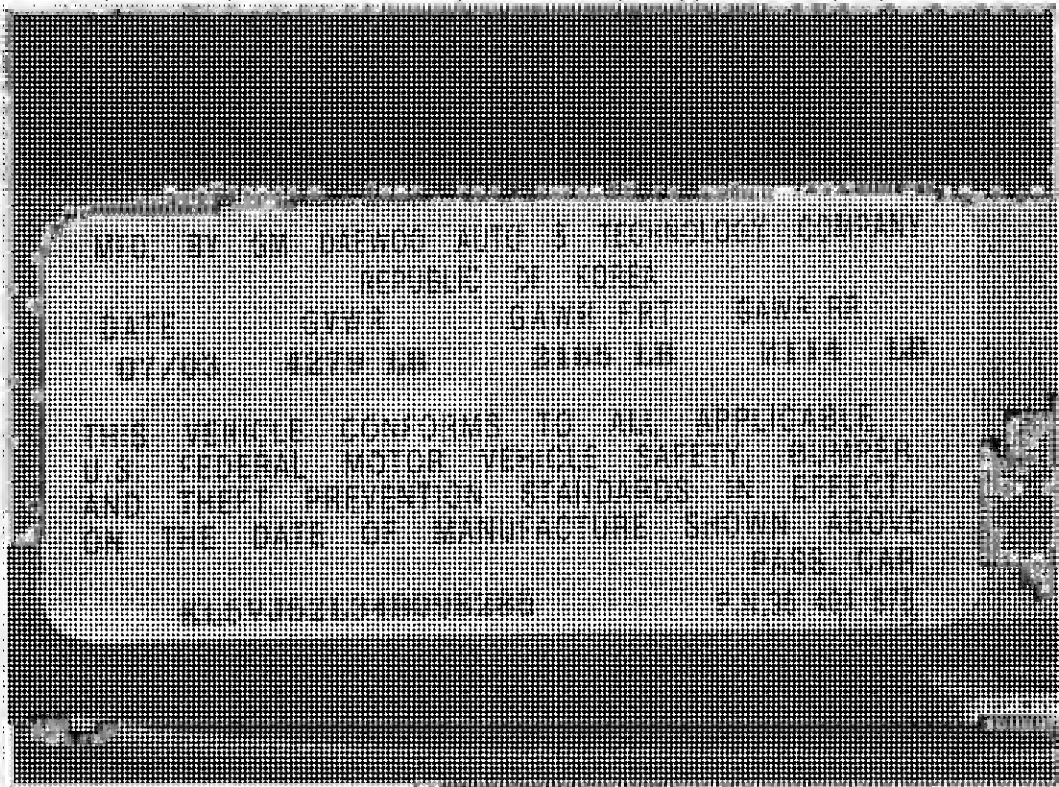


Figure A-5: Vehicle Certification Label

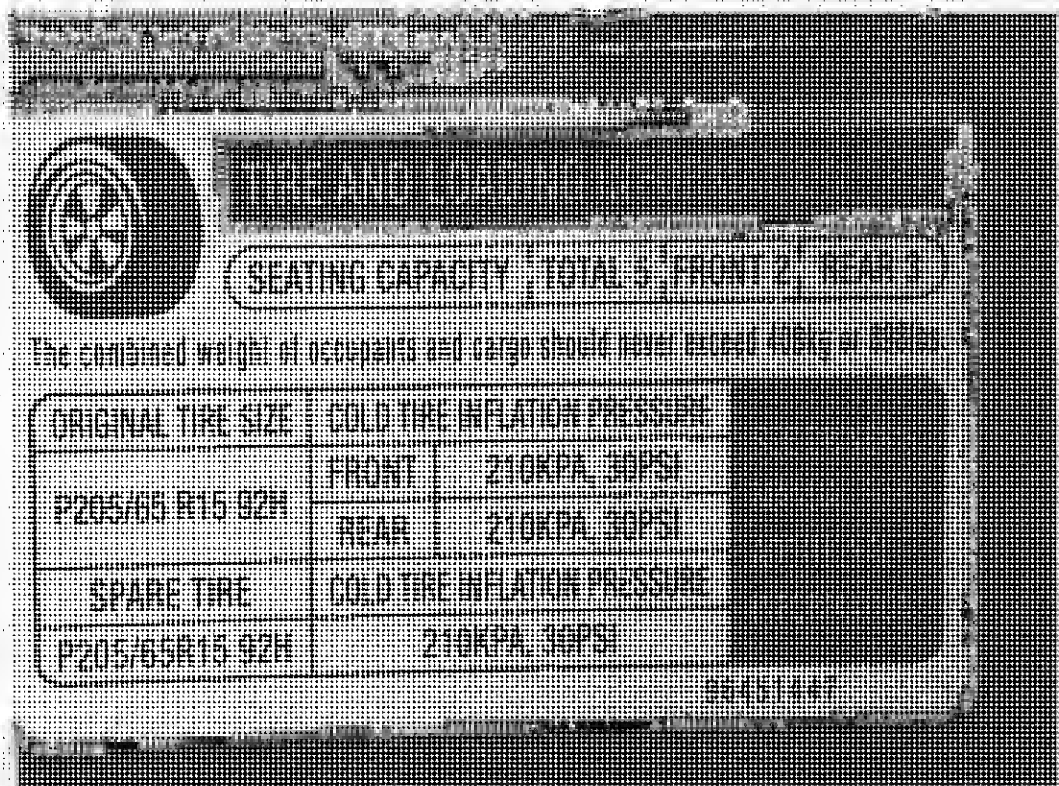


Figure A-6: Vehicle Tire Label

A-7

207-KG-06-003

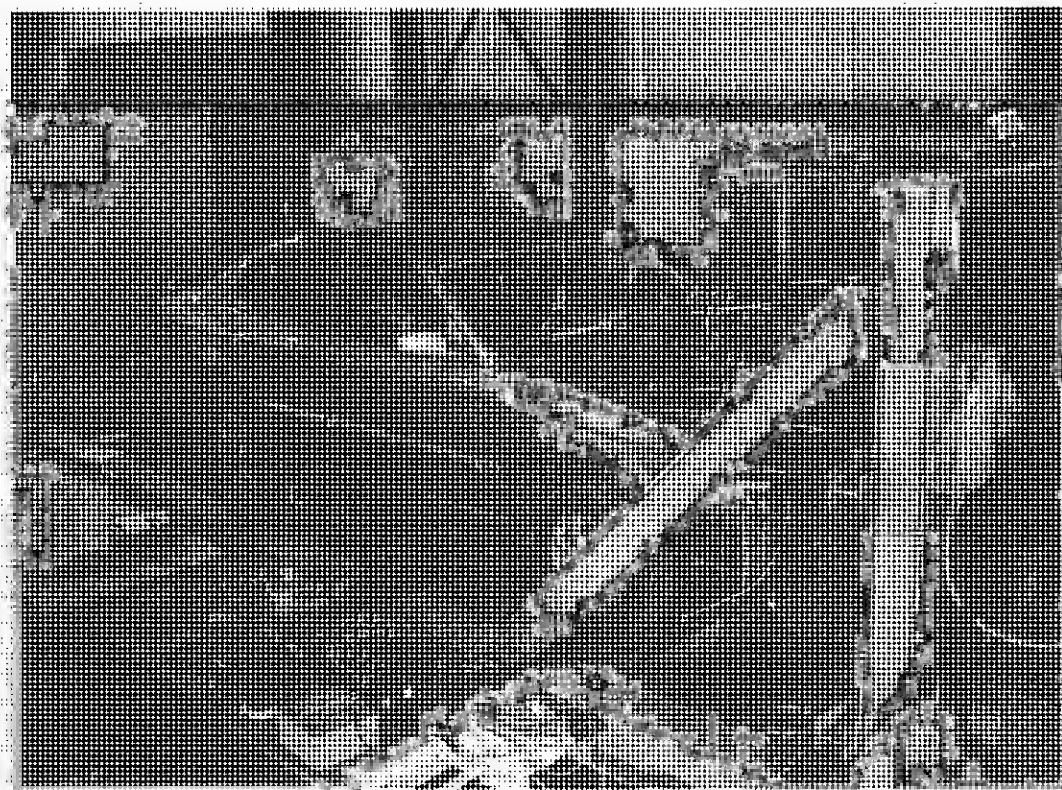


Figure A-7: Vehicle Mounted in Test Fixture

A-8

207-KG-06-003

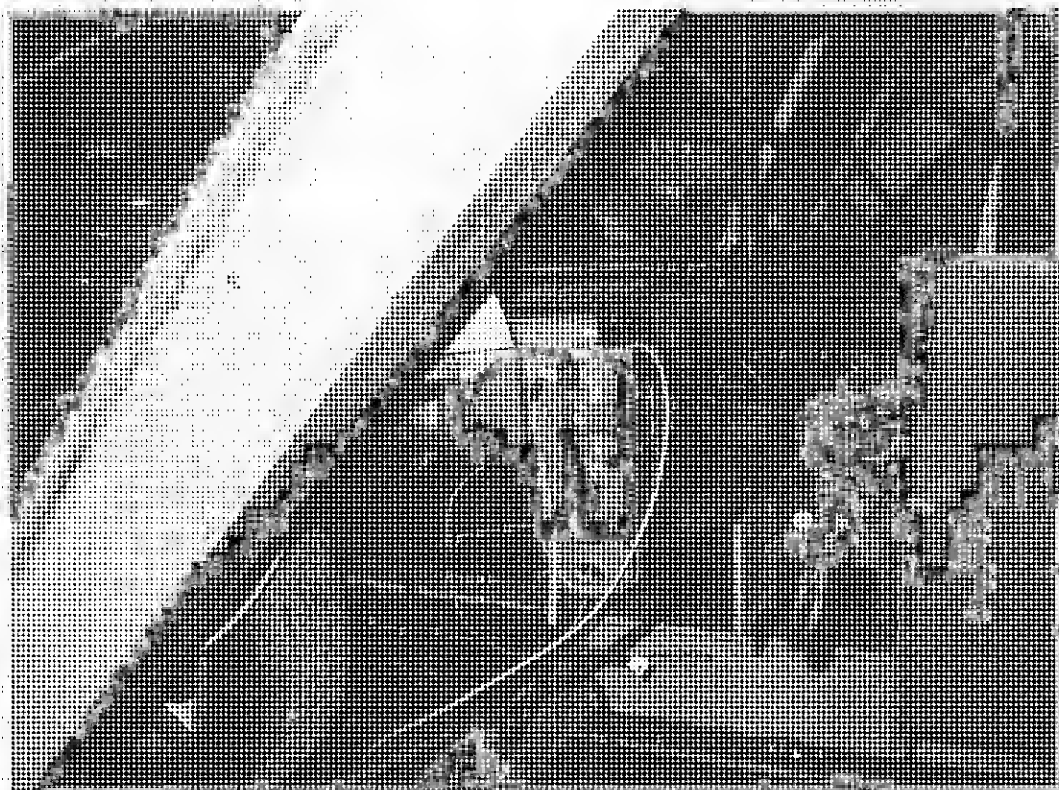


Figure A-8: Vehicle Mounted in Test Fixture

A-9

207-KA-04-003

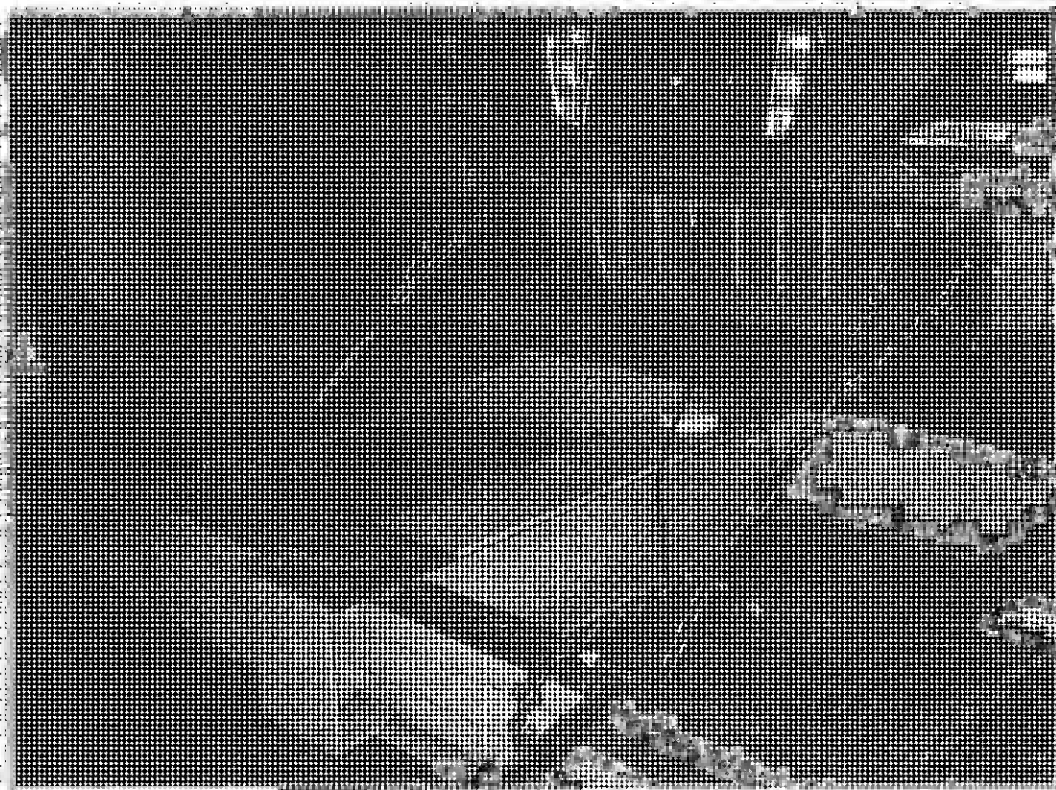


Figure A-9: Vehicle Mounted in Test Fixture

A-10

207-KA-04-003

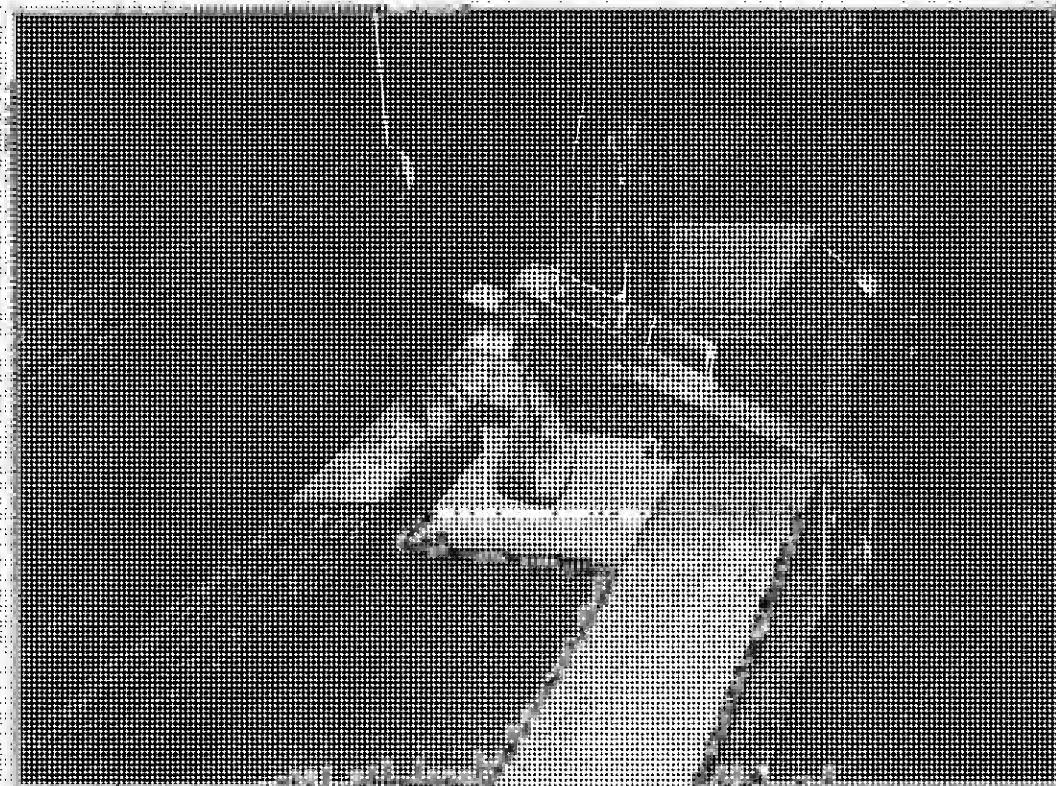


Figure A-10: Vehicle Mounted in Test Fixture



Figure A-11: All Moment on Seat Frame and Adjusters, Driver's Side, Pre-Test

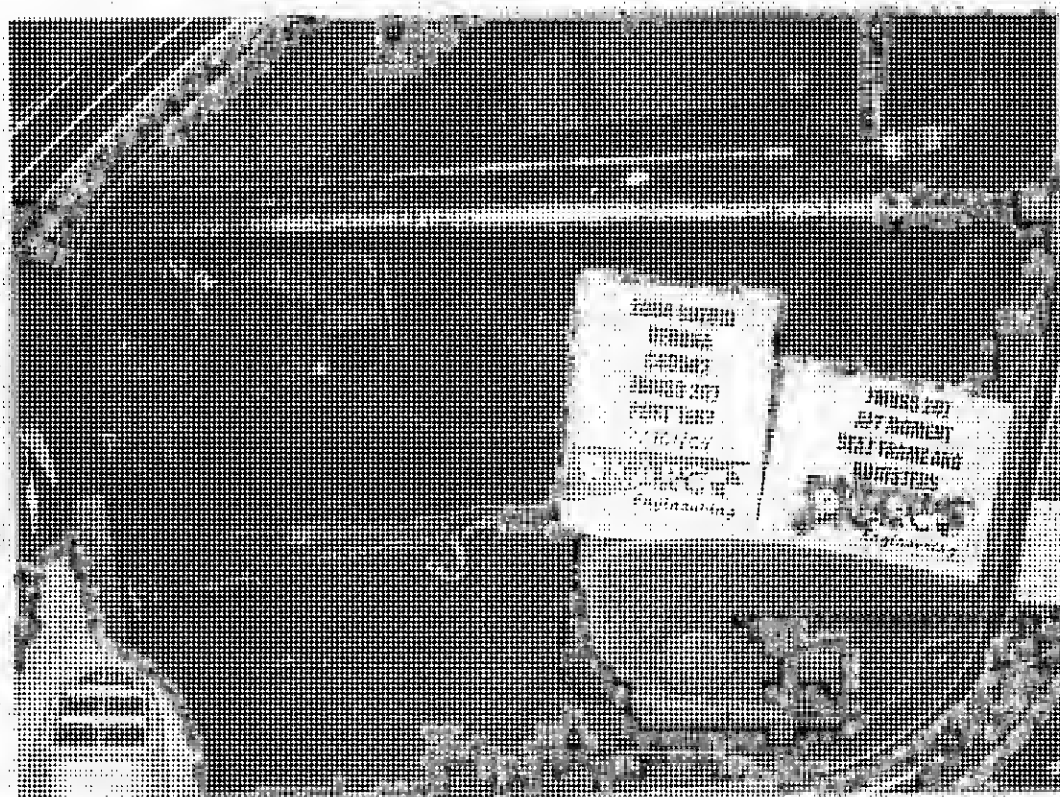


Figure A-12: All Moment on Seat Frame and Adjusters, Driver's Side, Post-Test

A-13

2007 JAN 24 03E

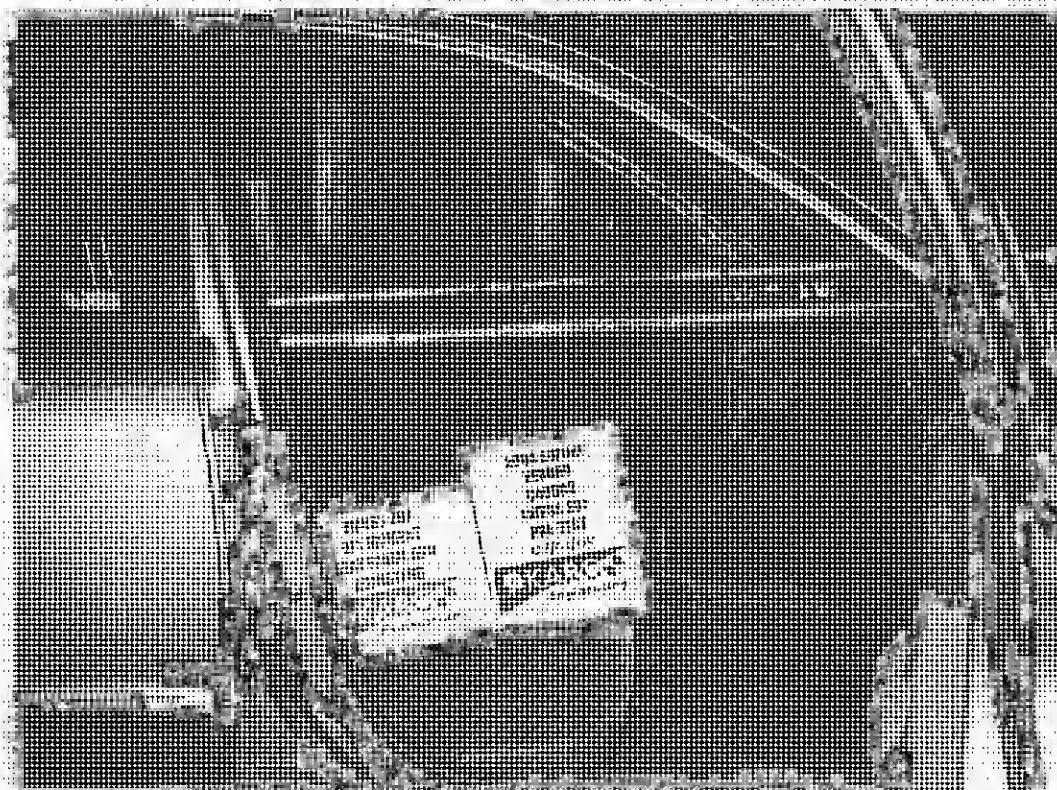


Figure A-13: AB Moment on Seat Frame and Adjusters, Passenger's Side, Pre-Test

A-14

2007 JAN 24 03E

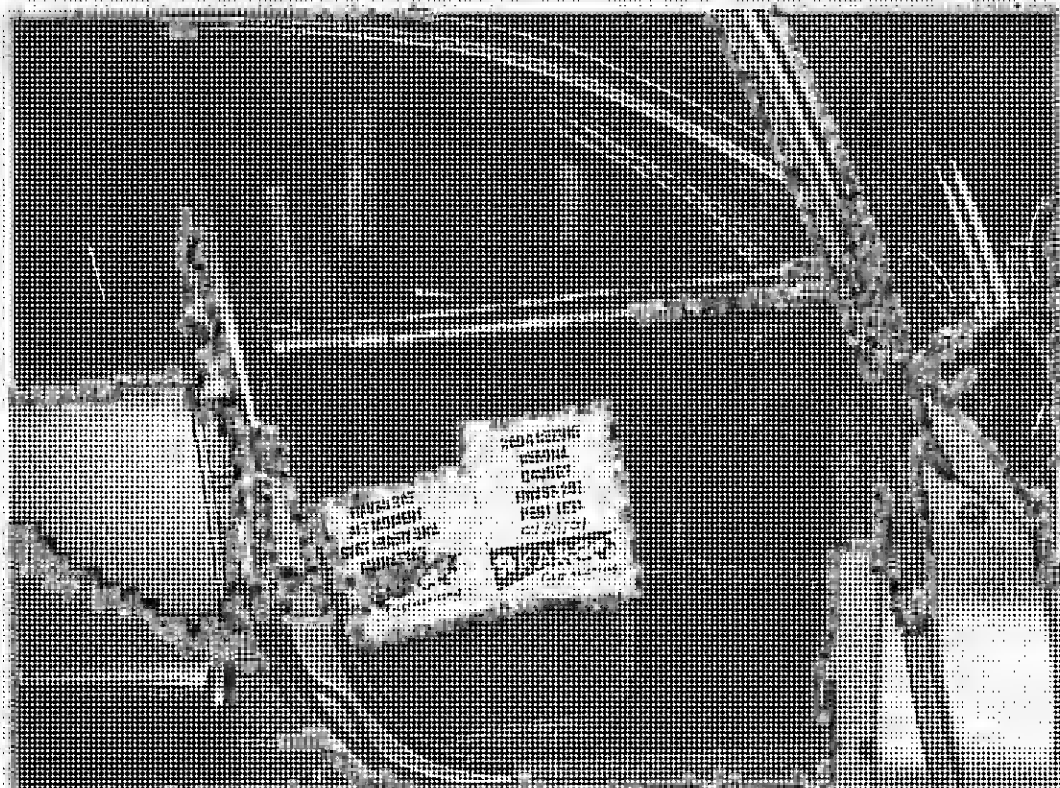


Figure A-14: AB Moment on Seat Frame and Adjusters, Passenger's Side, Post-Test

A-15

2014-04-03



Figure A-15: Air Load on Seat Frame and Adjusters, Driver's Side, Pre-Test (Label in photograph is correct)

A-16

2014-04-03

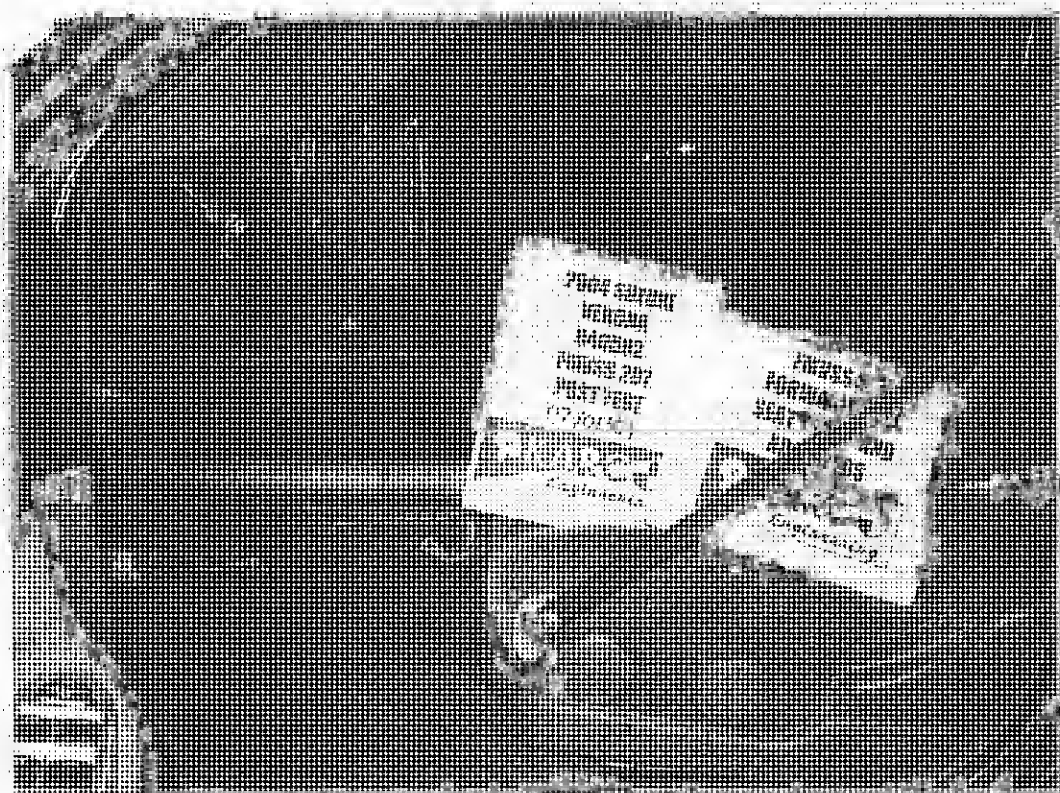


Figure A-16: Air Load on Seat Frame and Adjusters, Driver's Side, Post-Test (Label in photograph is incorrect)

A-17

207-KAP-04-005

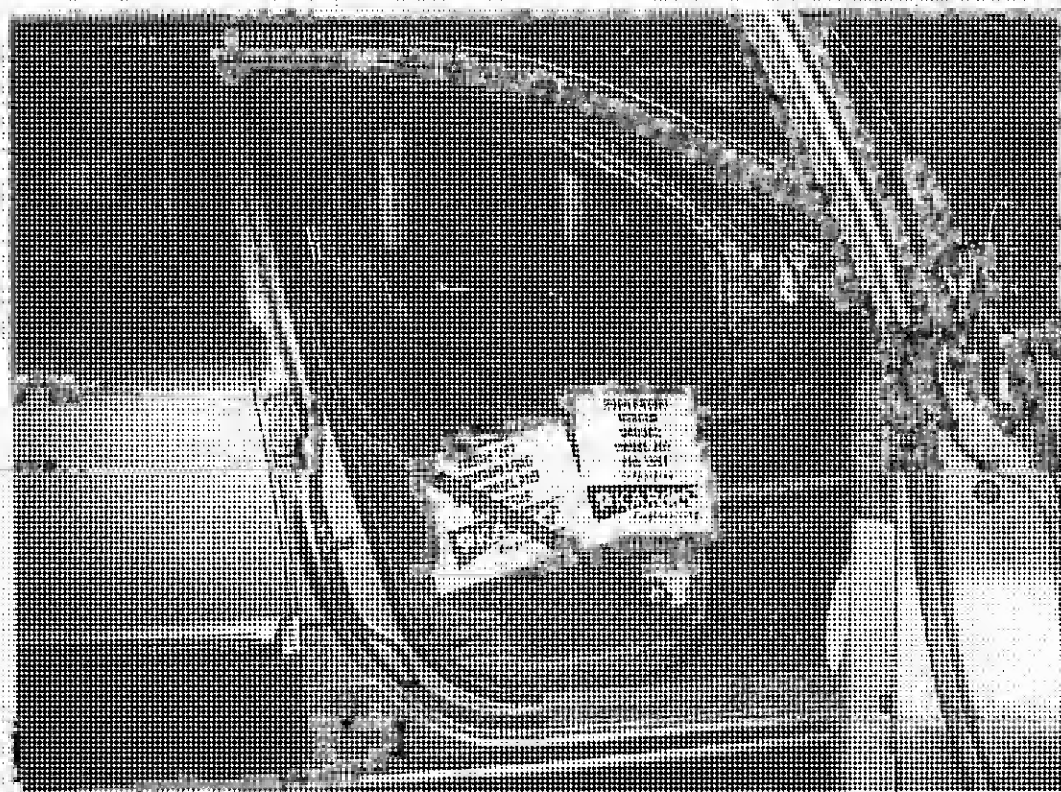


Figure A-17: All Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test (Label in photograph is incorrect)

A-18

207-KAP-04-006

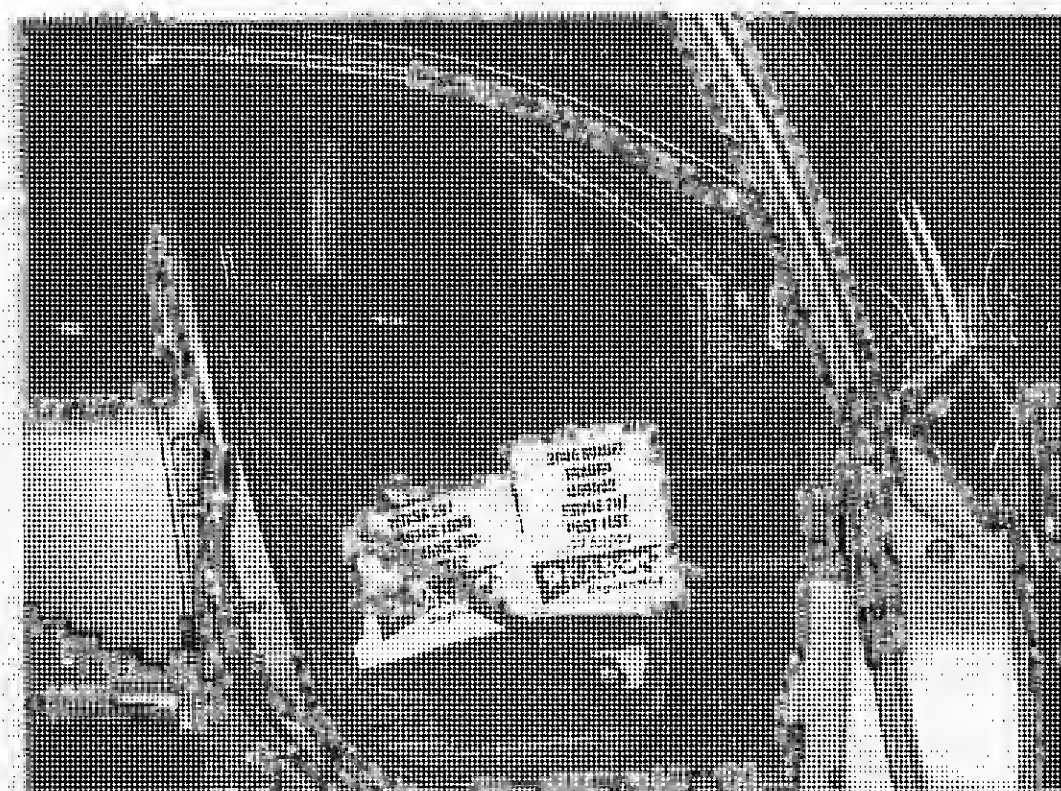


Figure A-18: All Load on Seat Frame and Adjusters, Passenger's Side, Post-Test (Label in photograph is incorrect)

1-19

2014-04-03



Figure A-19: Forward Load on Seat Frame and Adjusters, Driver's Side, Pre-Test

A-20

2014-04-03



Figure A-20: Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test

A-21

207-46-4-005

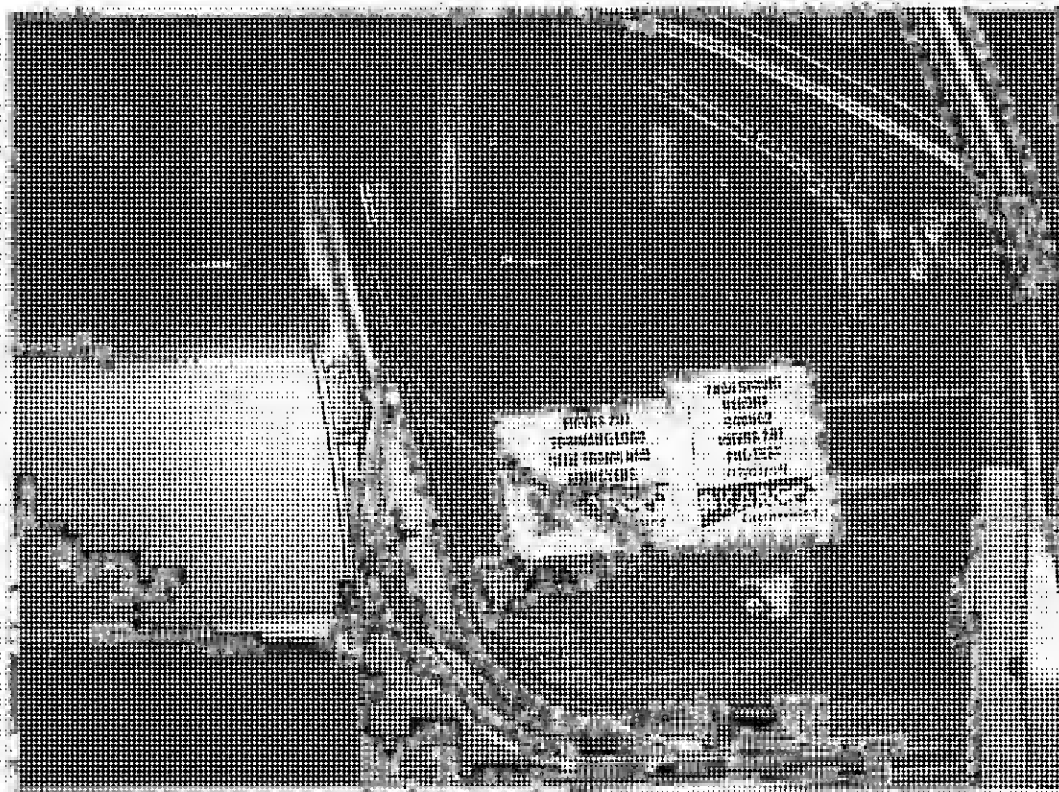


Figure A-21: Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test

A-22

207-46-4-005

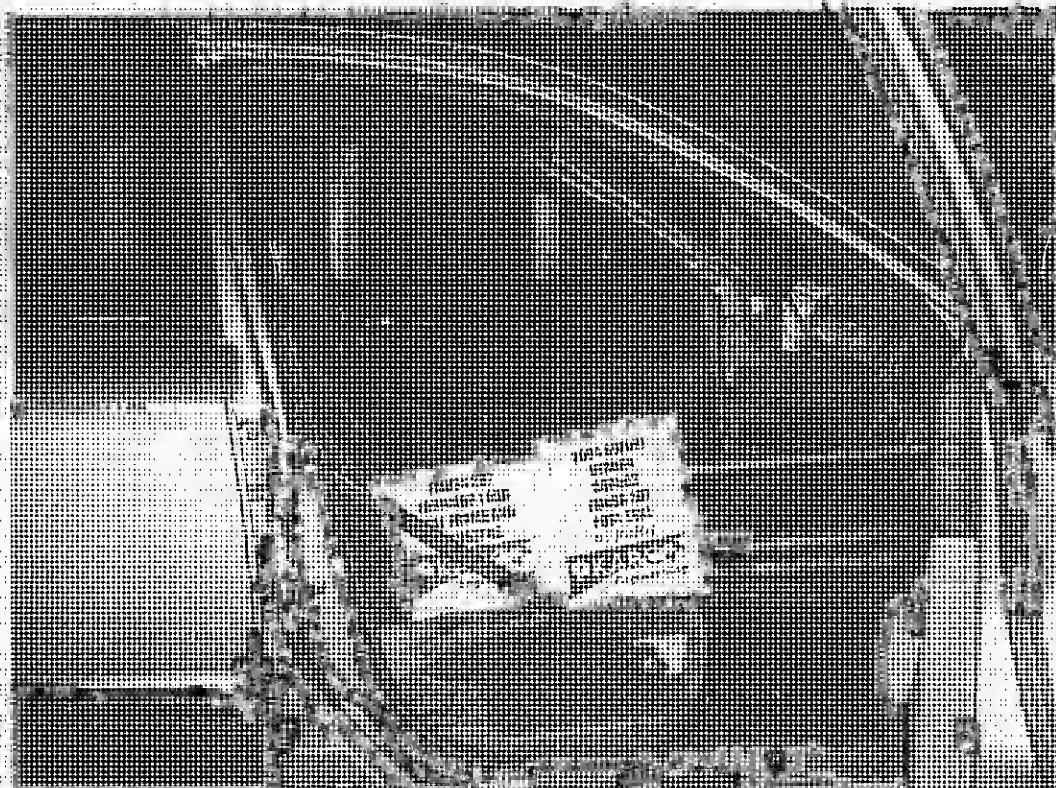


Figure A-22: Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test

A-25

2014-04-03

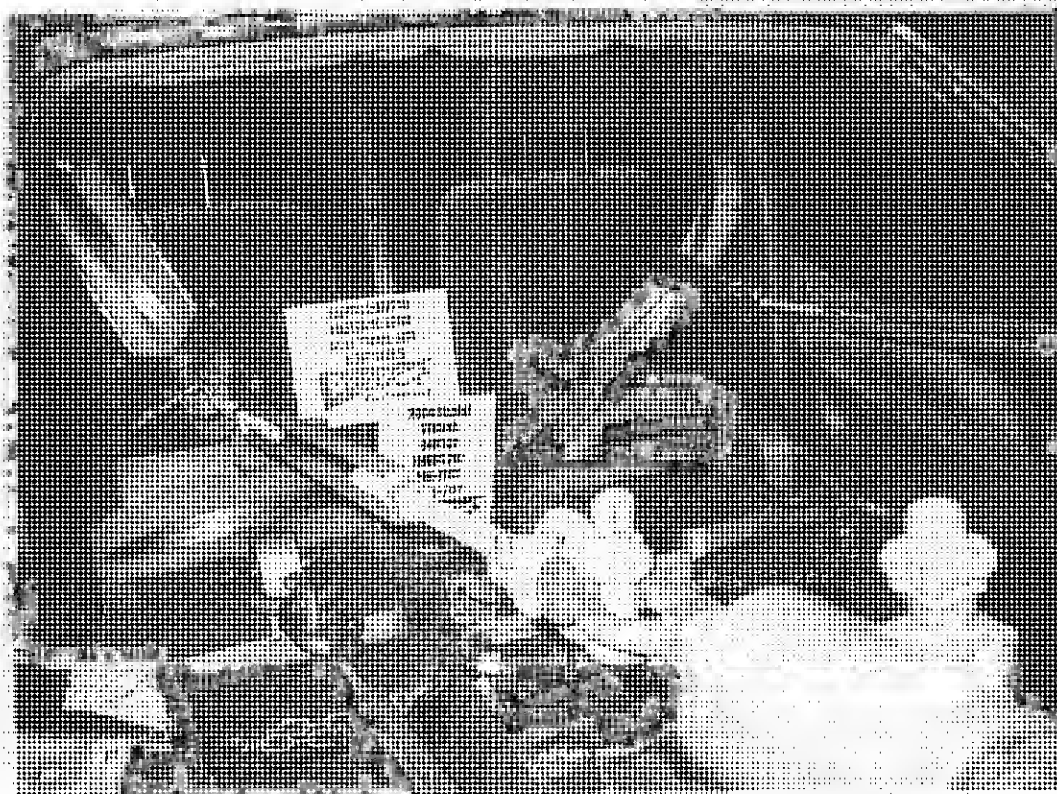


Figure A-25. 207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Pre-Test

A-26

2014-04-03

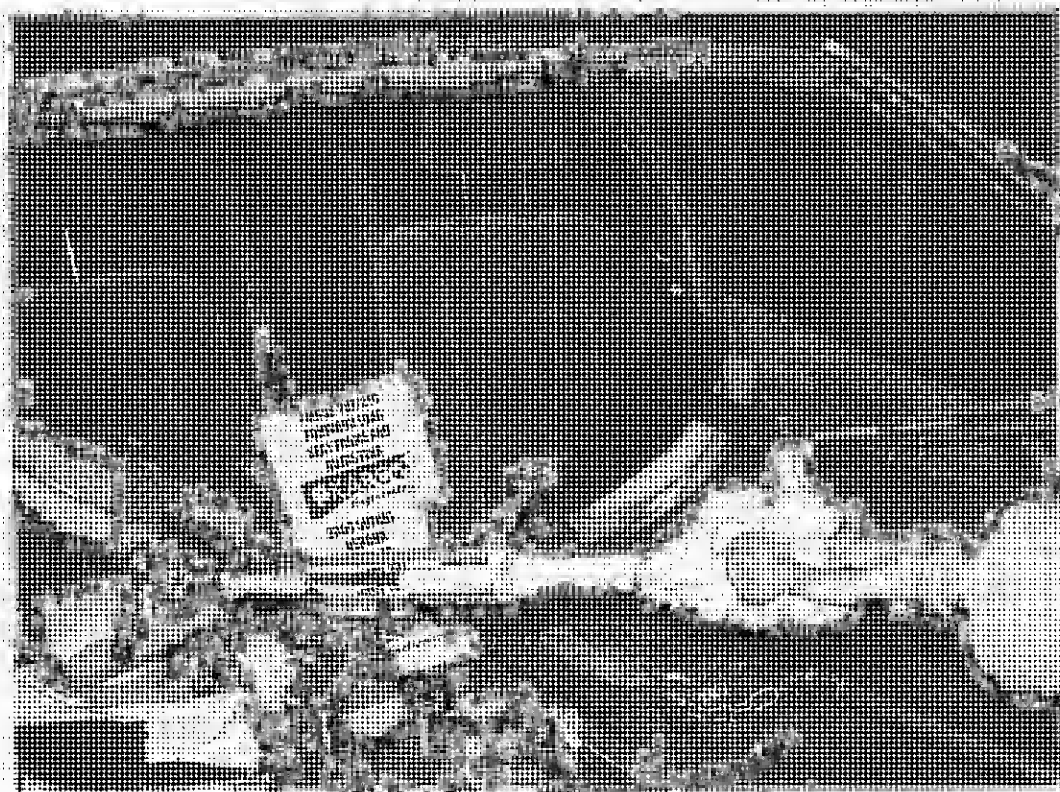


Figure A-26. 207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test

A-27

207 149 46 225

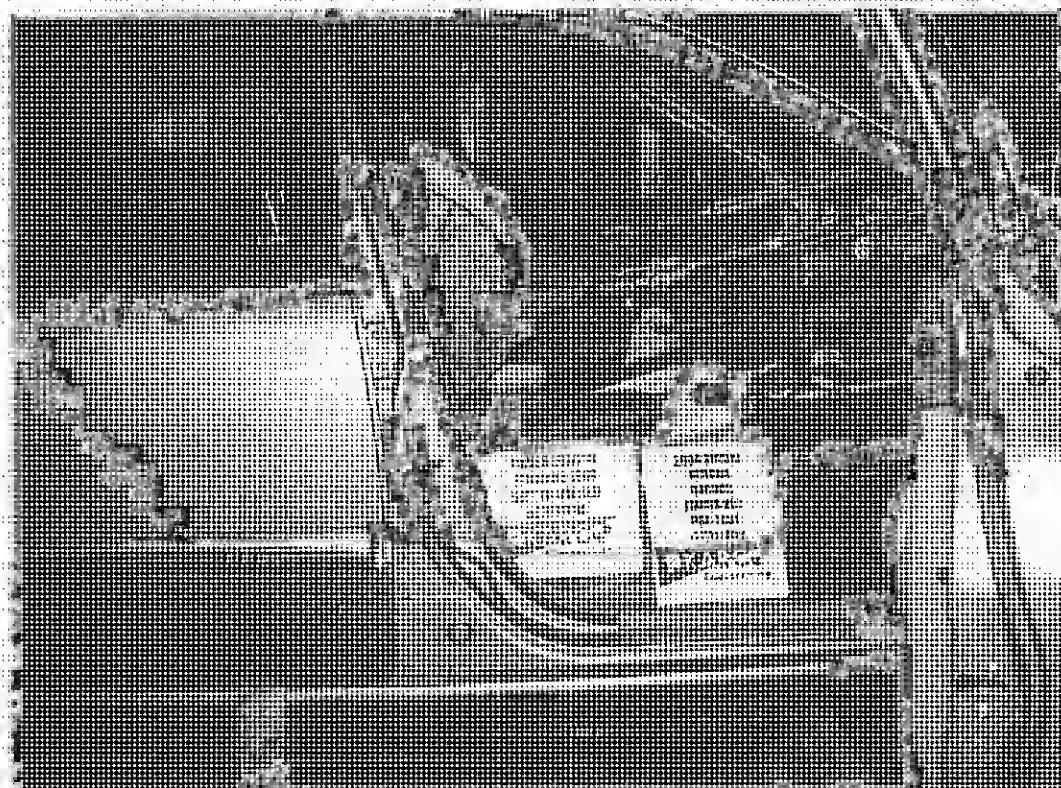


Figure A-27: 207/240 Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test

A-28

207 149 46 225



Figure A-28: 207/240 Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test

A-31

207-648-24-009

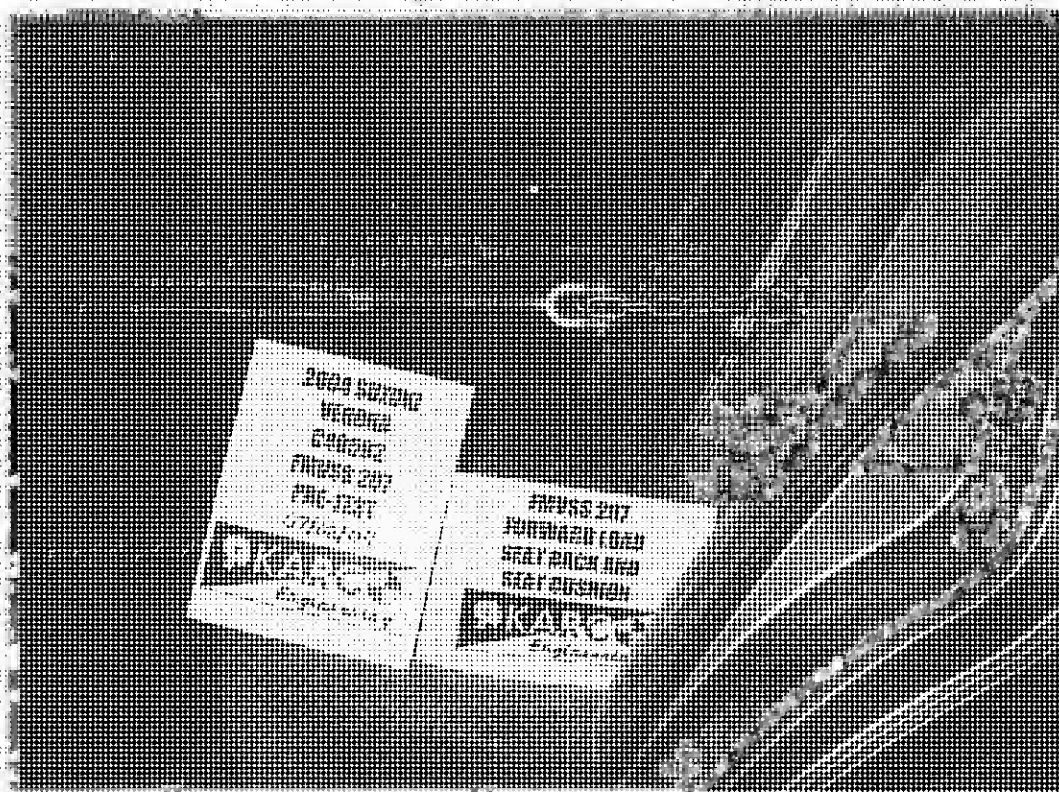


Figure A-31: Forward Load on Seat Back and Seat Cushion, Driver's Side Rear, Pre-Test

A-32

207-648-24-009



Figure A-32: Forward Load on Seat Back and Seat Cushion, Driver's Side Rear, Post-Test

1-25

2017-04-14-03

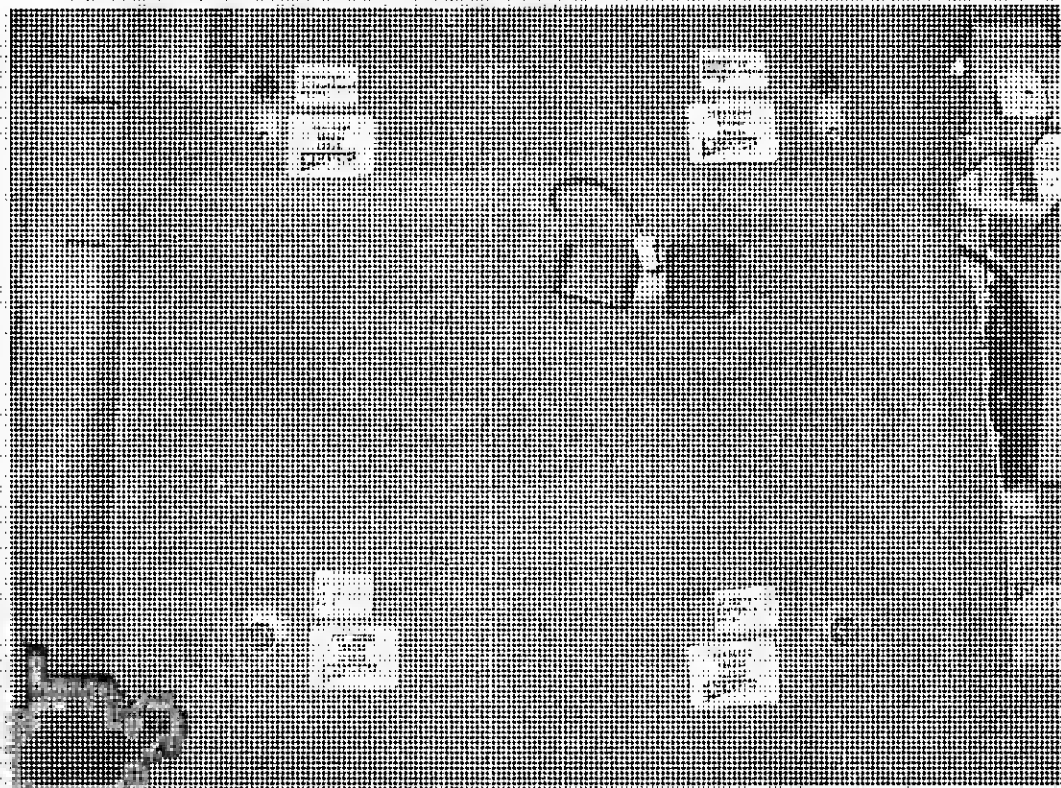


Figure A-35: Floor Pan Anchors, Left Front Seat Overall, Pre-Test

A-36

2017-04-14-03

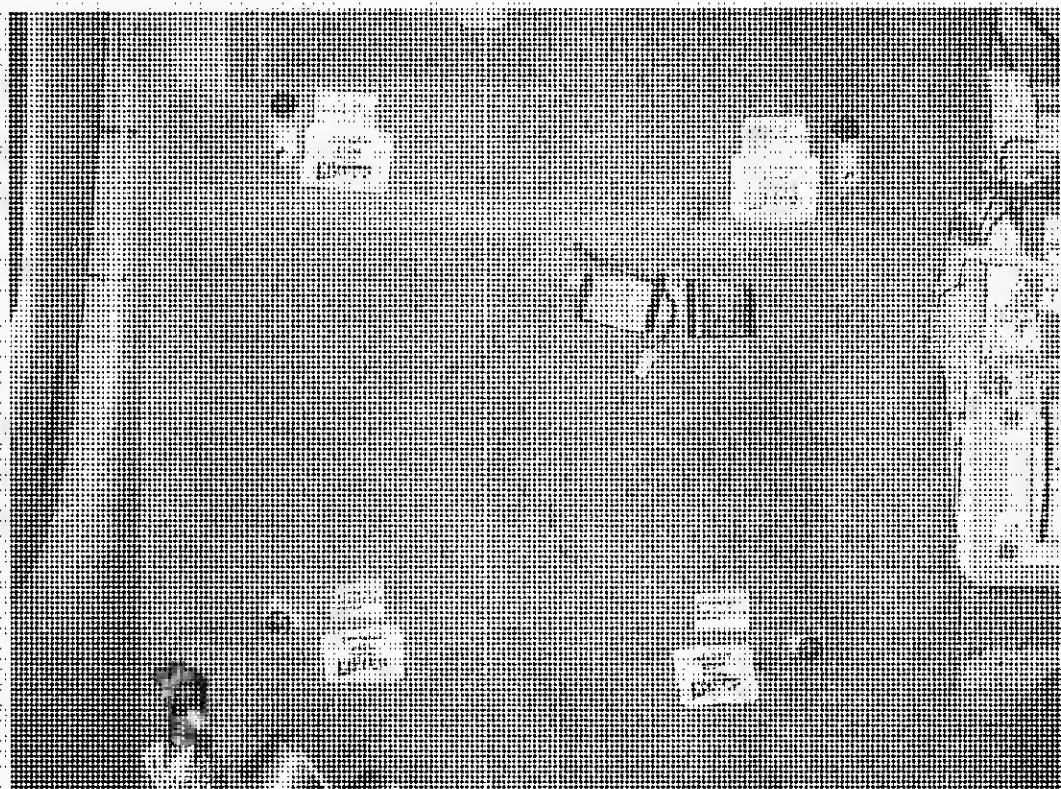


Figure A-36: Floor Pan Anchors, Left Front Seat Overall, Post-Test

A-37

207 A/R 94-035

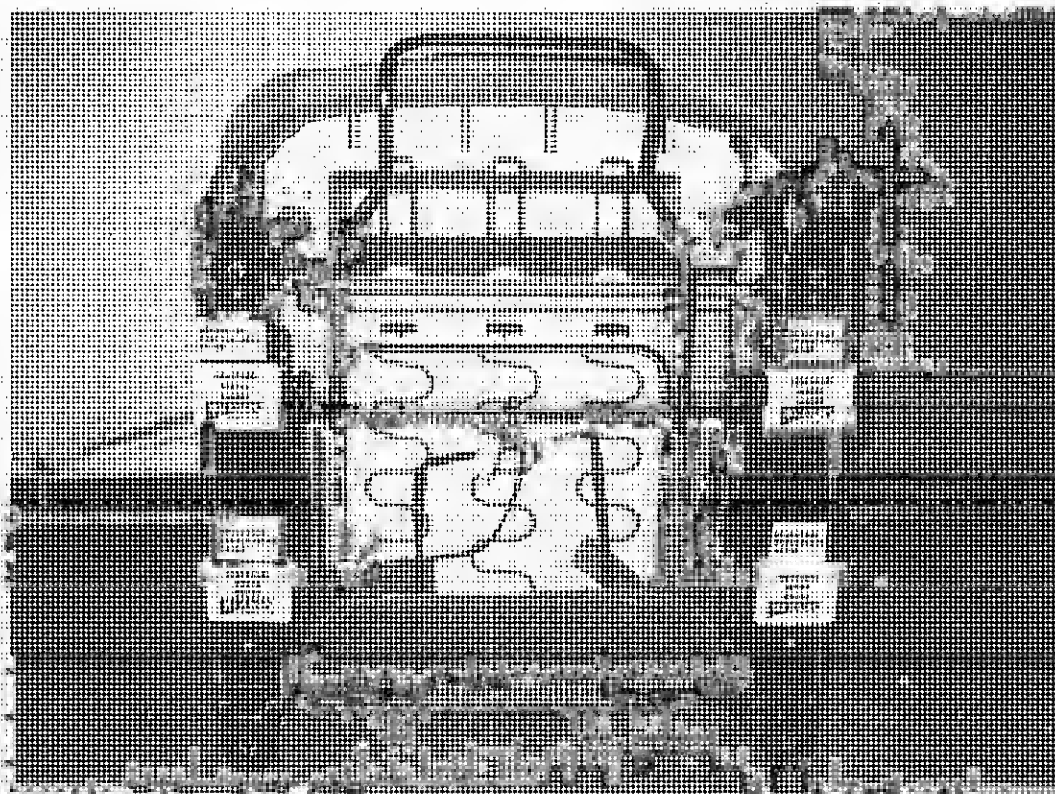


Figure A-37: Seat Anchors, Left Front Seat Overall, Pre-Test

A-38

207 A/R 94-035

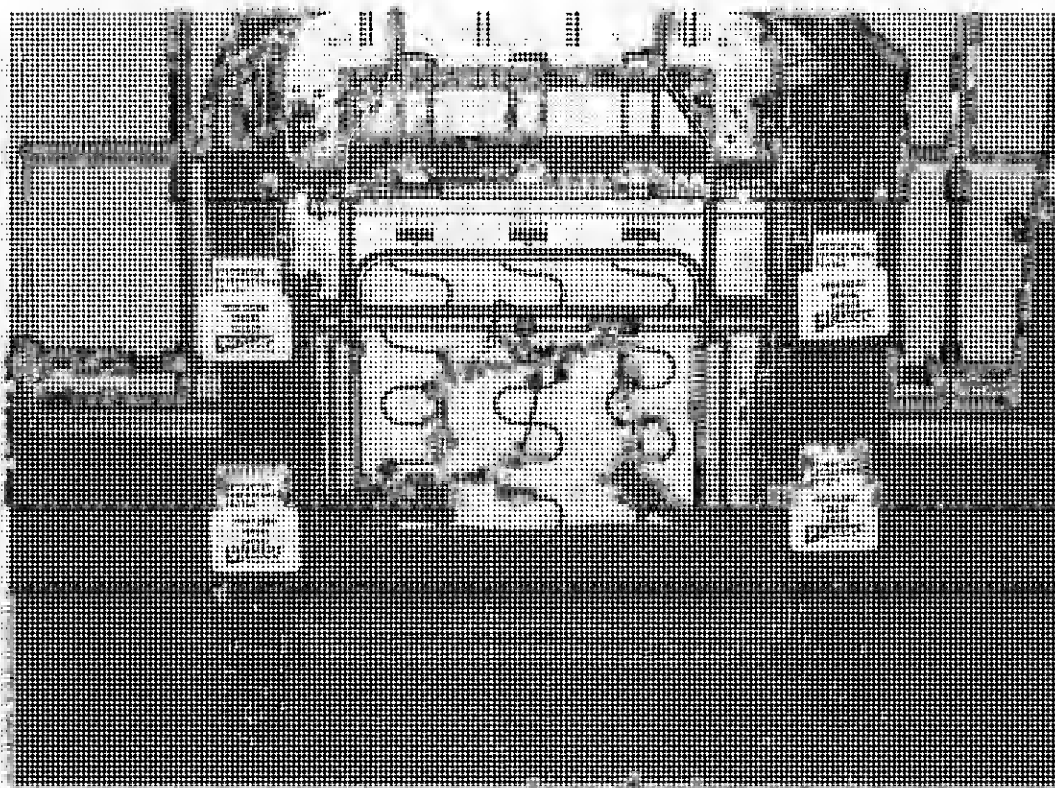


Figure A-38: Seat Anchors, Left Front Seat Overall, Post-Test

A-39

2004 SUZUKI
VEEBA
E40002

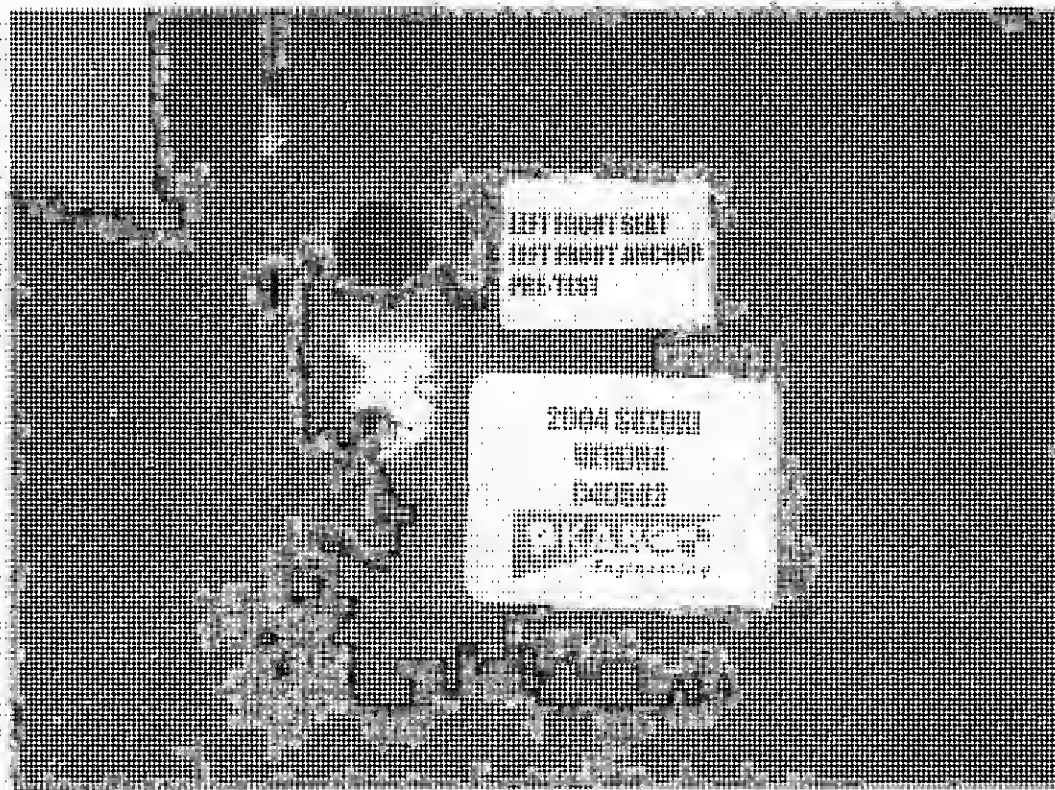


Figure A-39: Floor Pan Anchor, Left Front Seat, Pre-Test

A-40

2004 SUZUKI
VEEBA
E40002

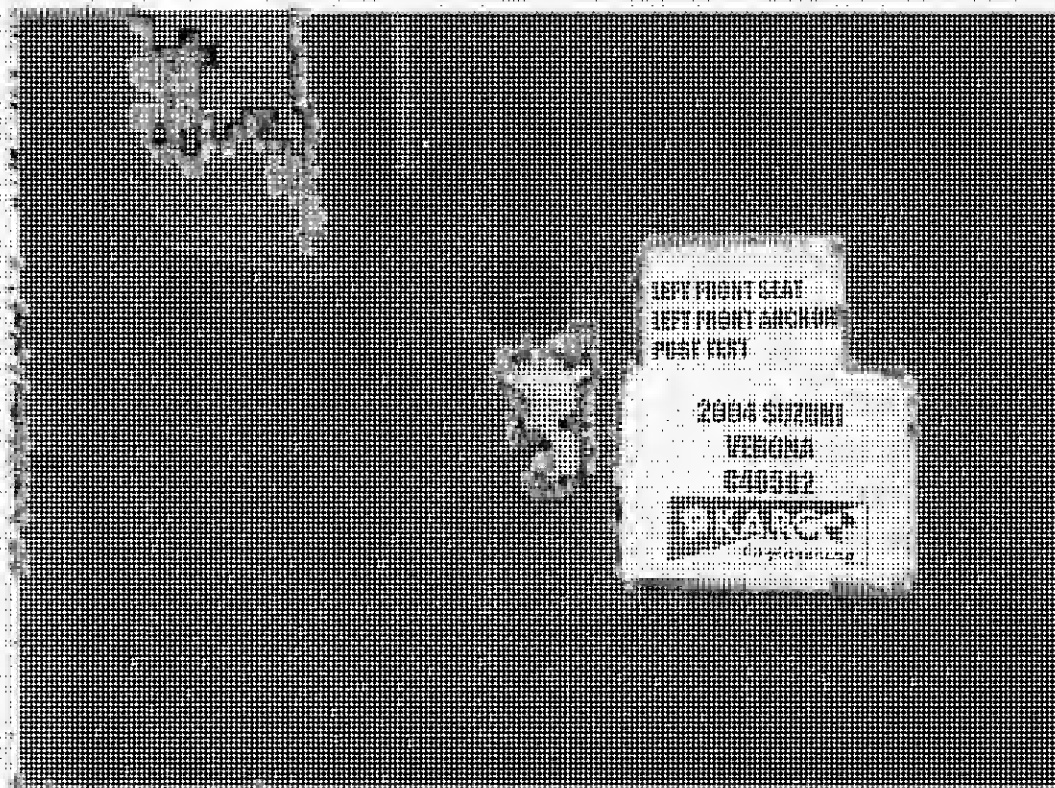


Figure A-40: Floor Pan Anchor, Left Front Seat, Post-Test

A-41

2007-K-3-04-006

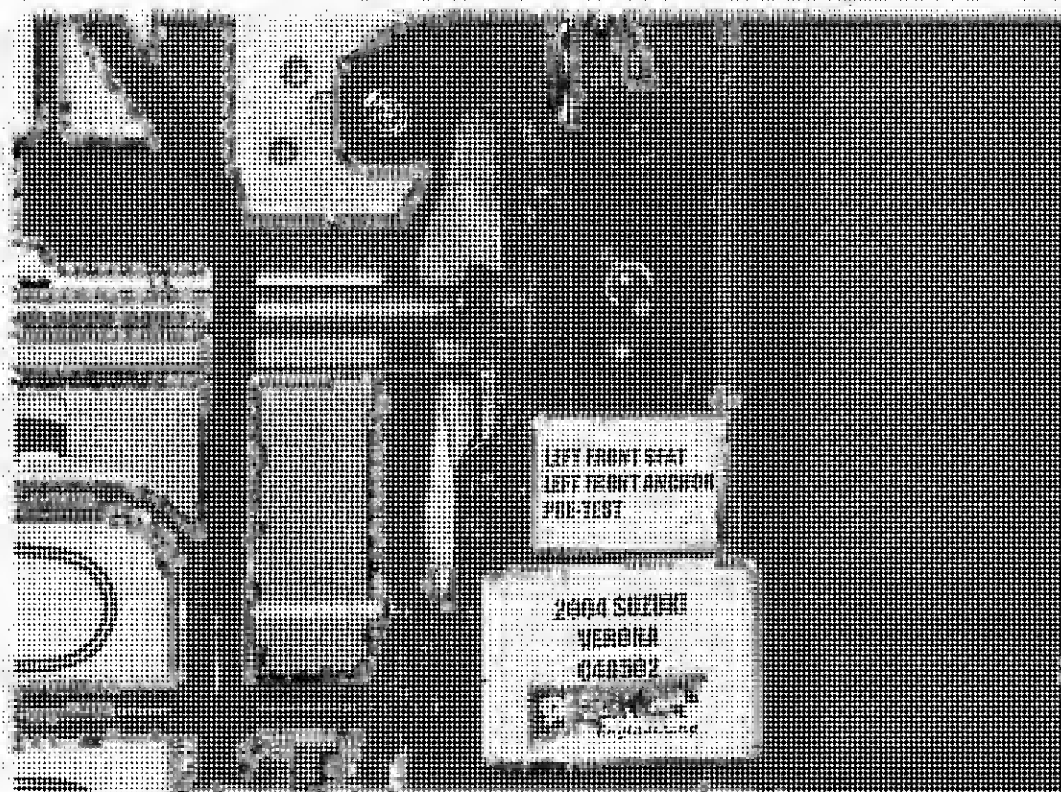


Figure A-41: Seat Anchor, Left Front Seat, Pre-Test

A-42

2007-K-3-04-006



Figure A-42: Seat Anchor, Left Front Seat, Post-Test

A-43

2007-04-04-005

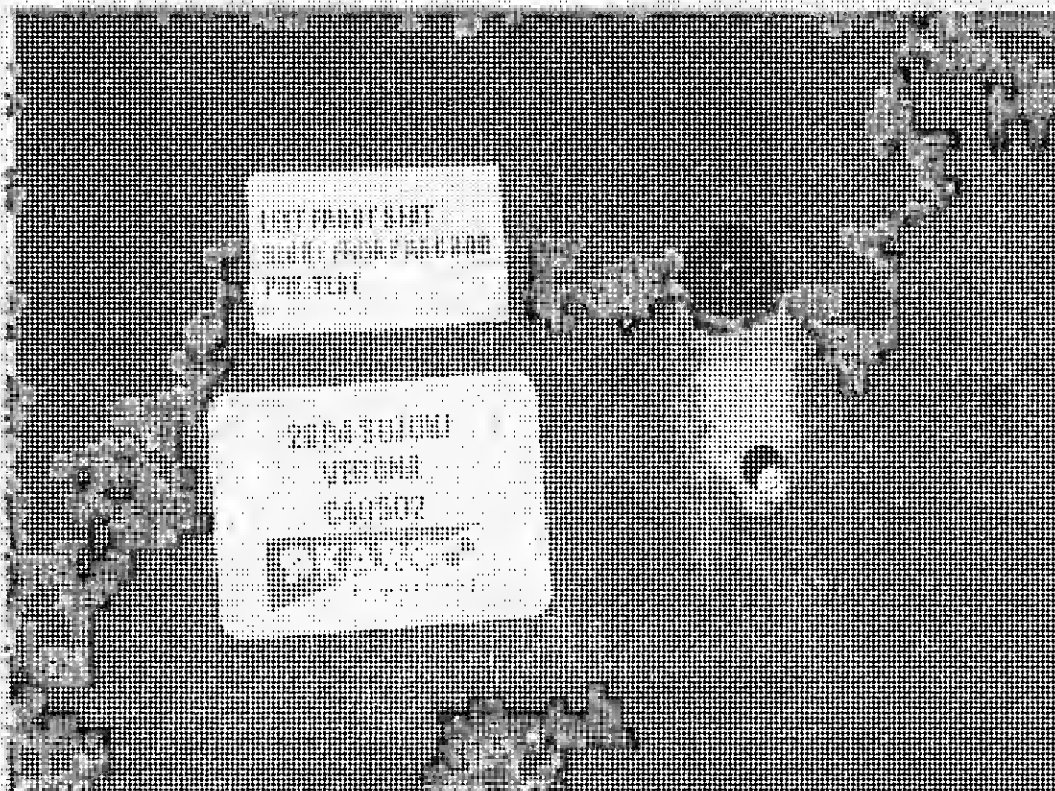


Figure A-43: Floor Plan Anchor, Left Front Seat, Pre-Test

A-44

2007-04-04-005



Figure A-44: Floor Plan Anchor, Left Front Seat, Post-Test

A-44

2004-2005-2006

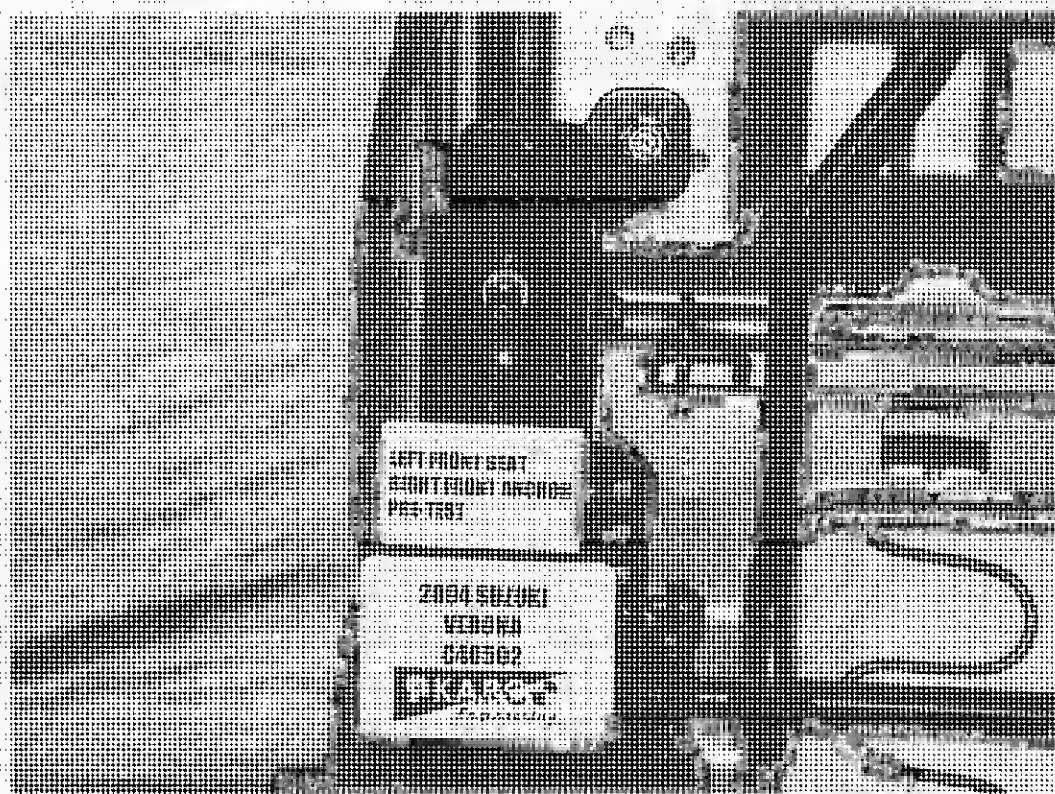


Figure A-45: Seat Anchor, Left Front Seat, Pre-Test

A-45

2004-2005-2006



Figure A-46: Seat Anchor, Left Front Seat, Post-Test

A-47

207 CAR 24-035

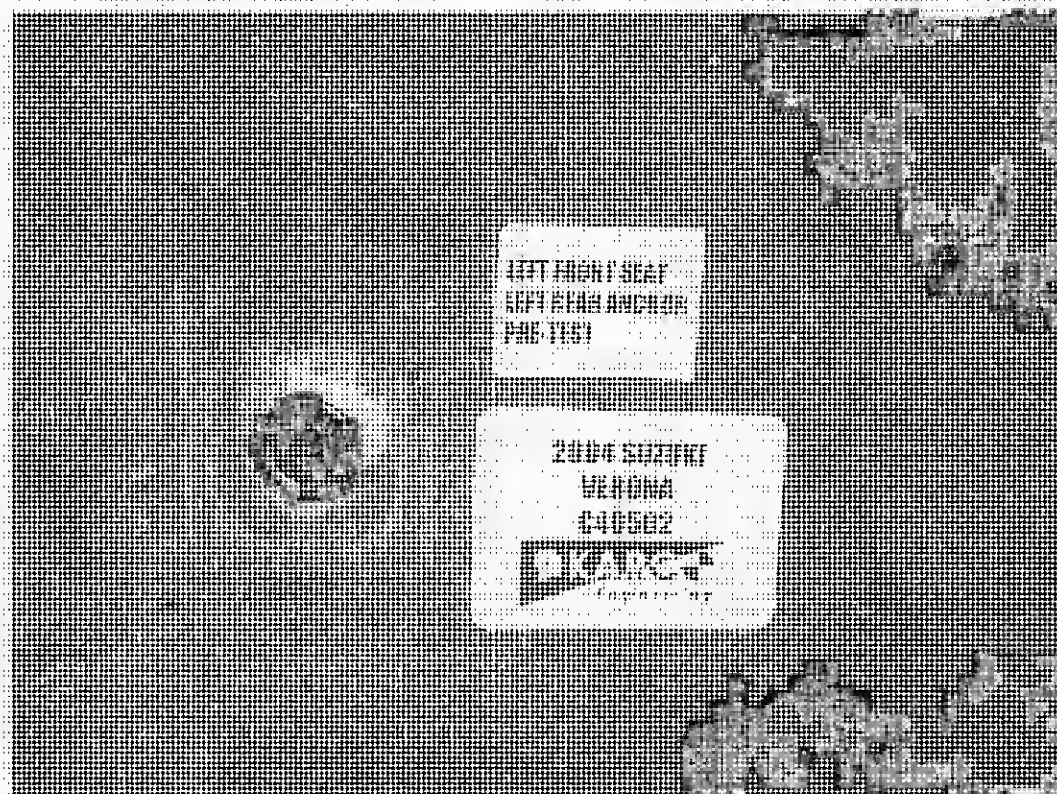


Figure A-47: Floor Pan Anchor, Left Front Seat, Pre-Test

A-48

207 CAR 24-035



Figure A-48: Floor Pan Anchor, Left Front Seat, Post-Test

ADD

207-KAR-12-4-75

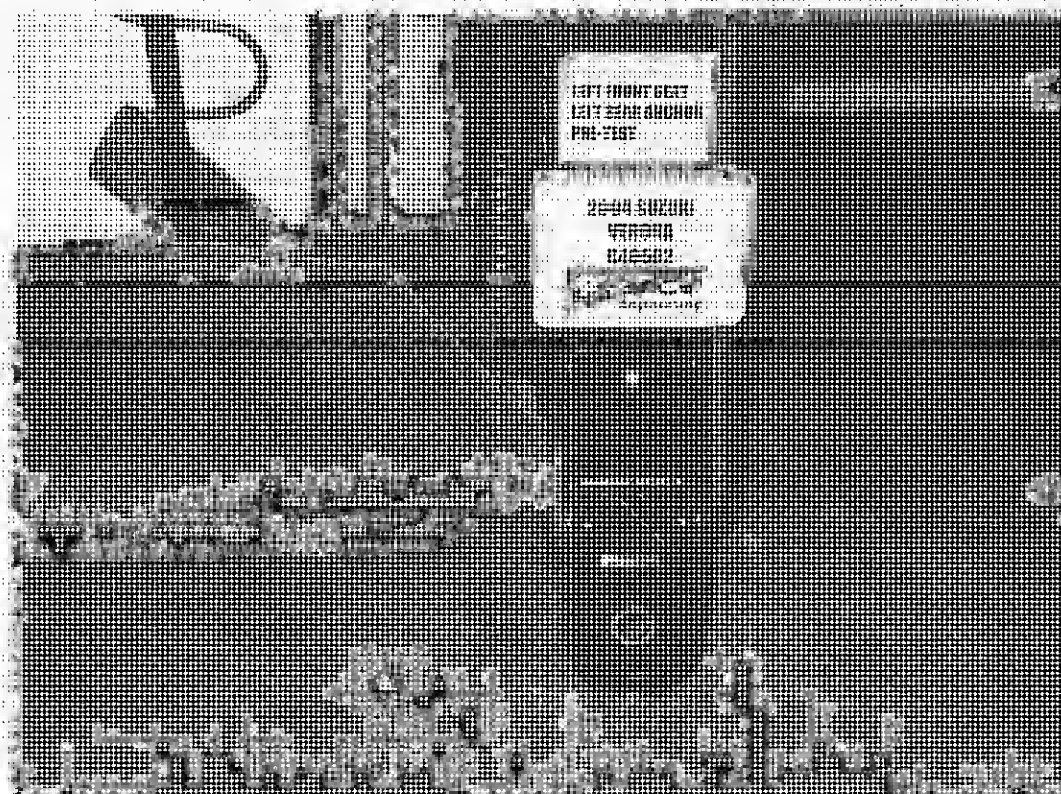


Figure A-49: Seal Anchor, Left Front Seat, Pre-Test

ADD

207-KAR-12-4-75

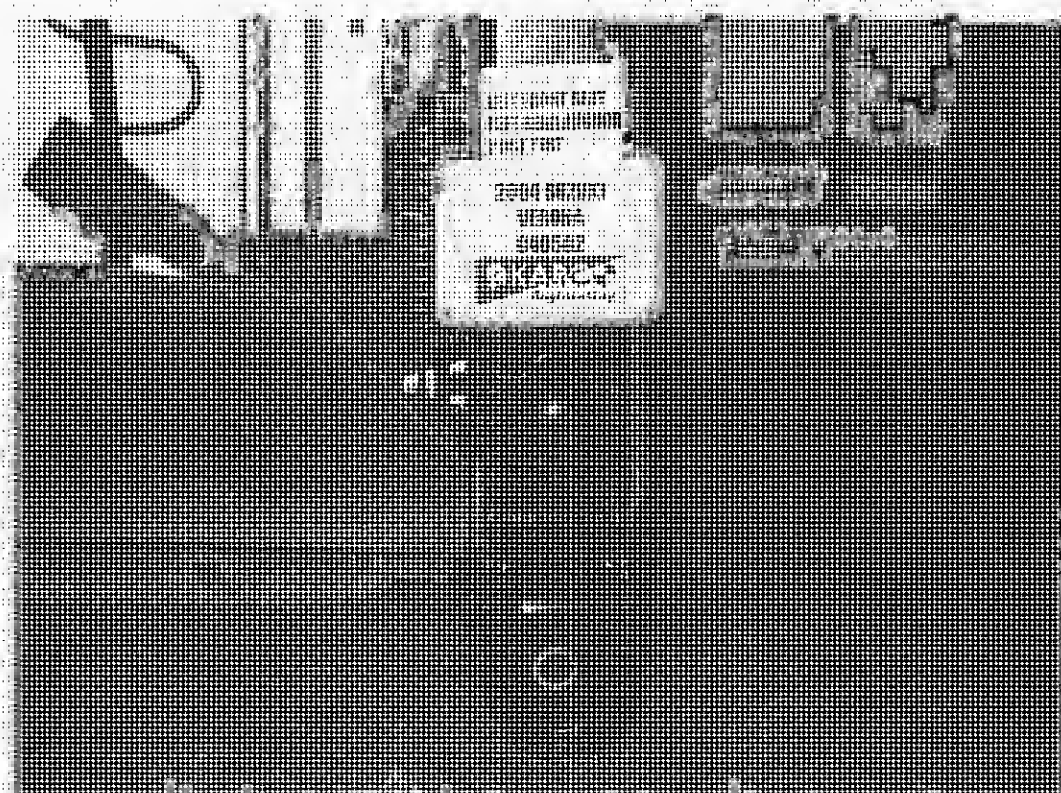


Figure A-50: Seal Anchor, Left Front Seat, Post-Test

A-51

201-KR-01-001

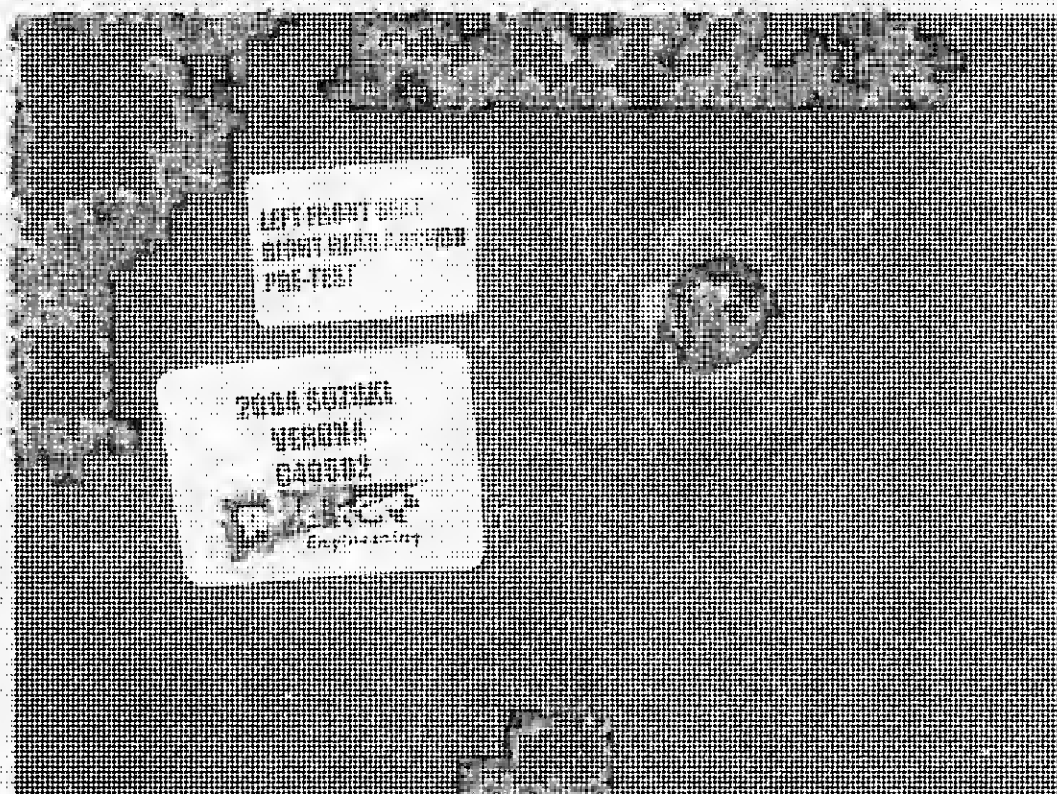


Figure A-51: Floor Pan Anchor, Left Front Seat, Pre-Test

A-52

201-KR-01-001

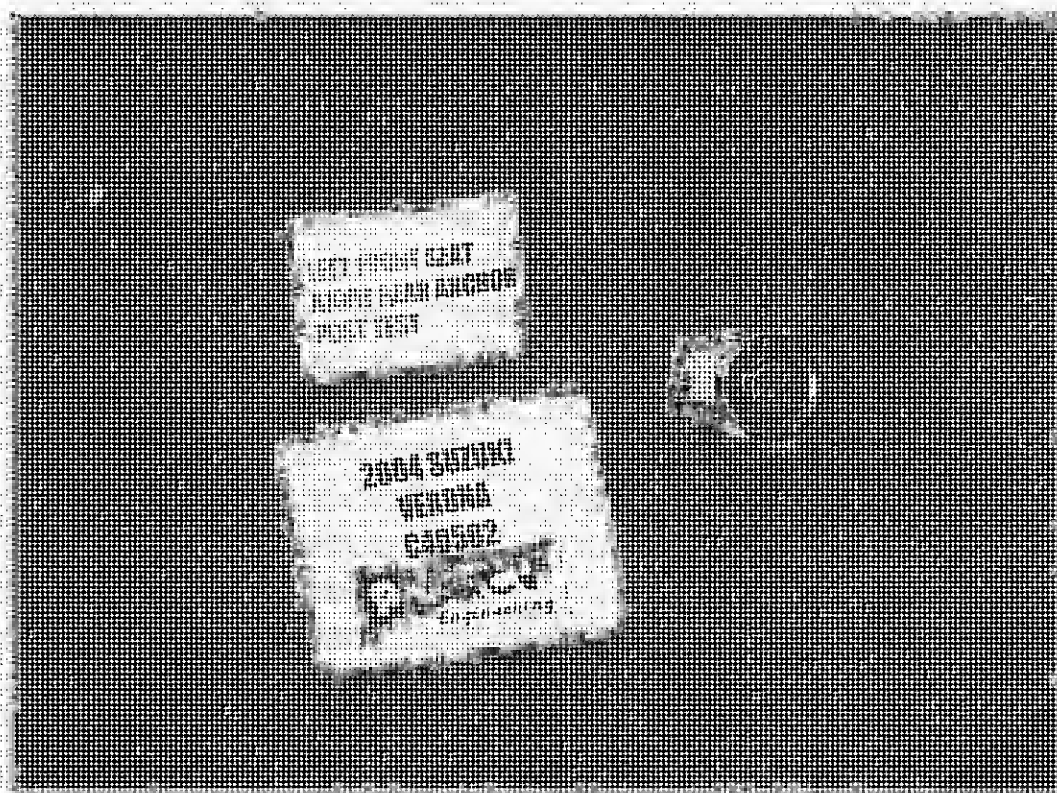


Figure A-52: Floor Pan Anchor, Left Front Seat, Post-Test

A-53

227 MAR 04 095

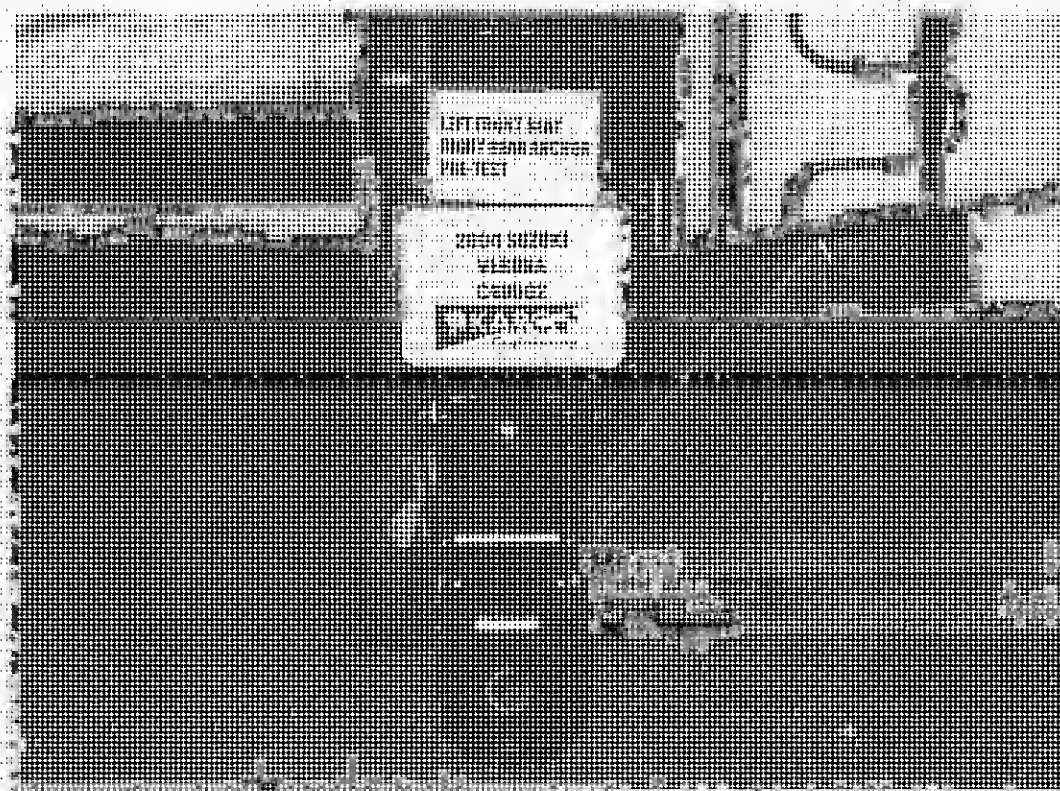


Figure A-53: Seat Anchor, Left Front Seat, Pre-Test

A-54

227 MAR 04 095

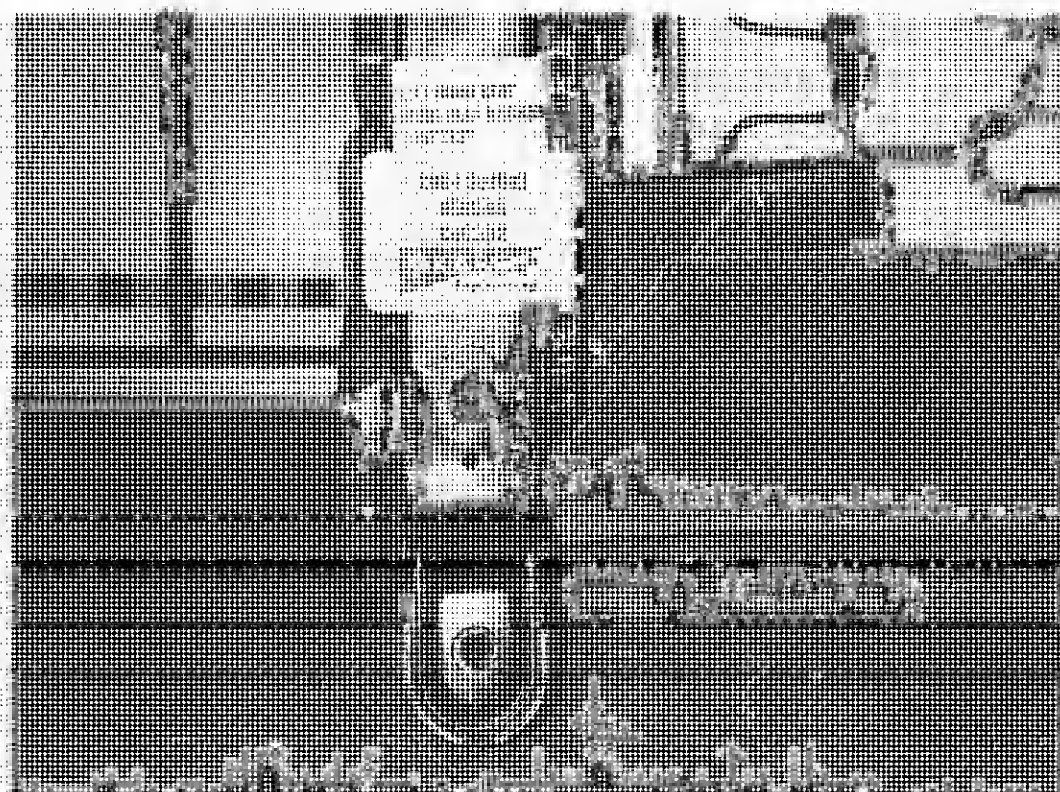


Figure A-54: Seat Anchor, Left Front Seat, Post-Test

A-55

207 K43 04-005

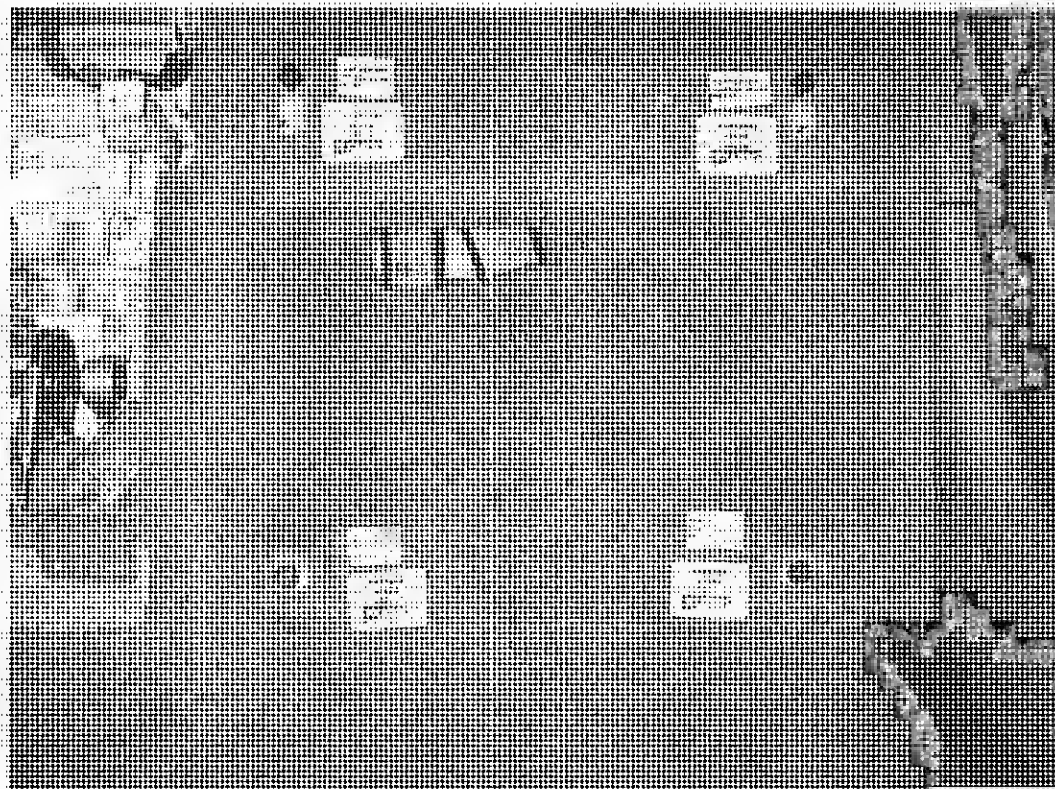


Figure A-55: Floor Pan Anchors, Right Front Seat Overlap, Pre-Test

A-56

207 K43 04-006



Figure A-56: Floor Pan Anchors, Right Front Seat Overlap, Post-Test

A-59

207-CAF-04-005

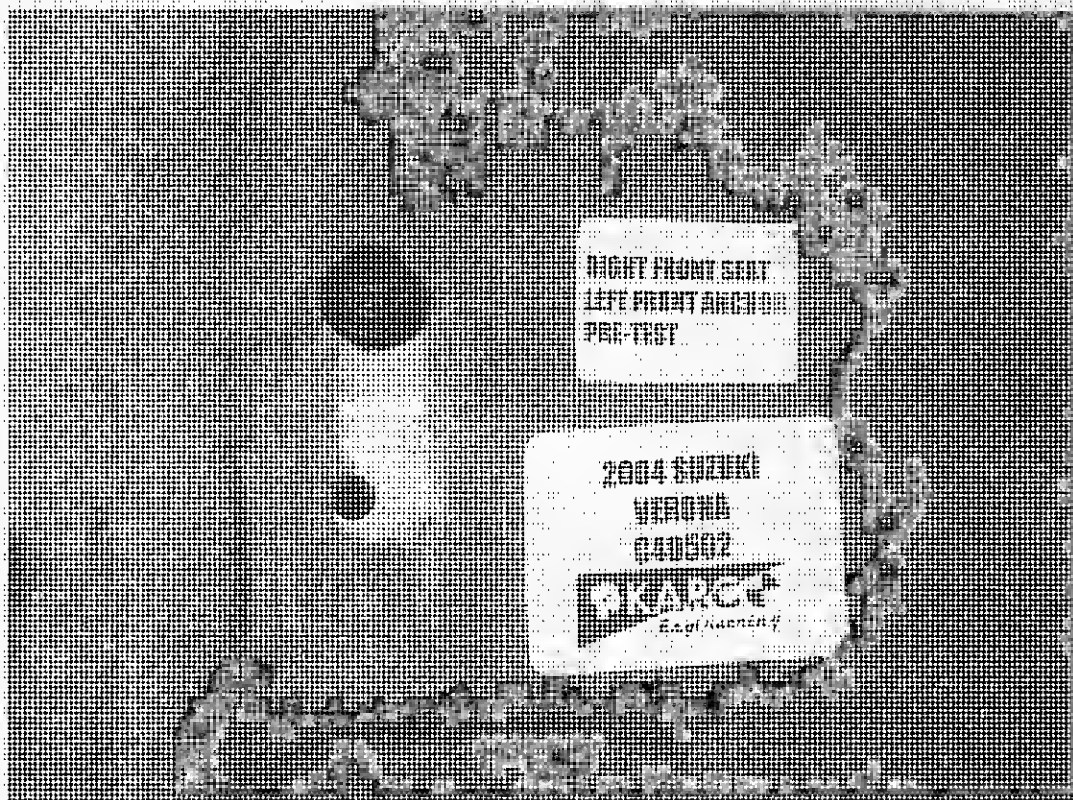


Figure A-59: Floor Plan Anchor, Right Front Seat, Pre-Test

A-60

207-CAF-04-005

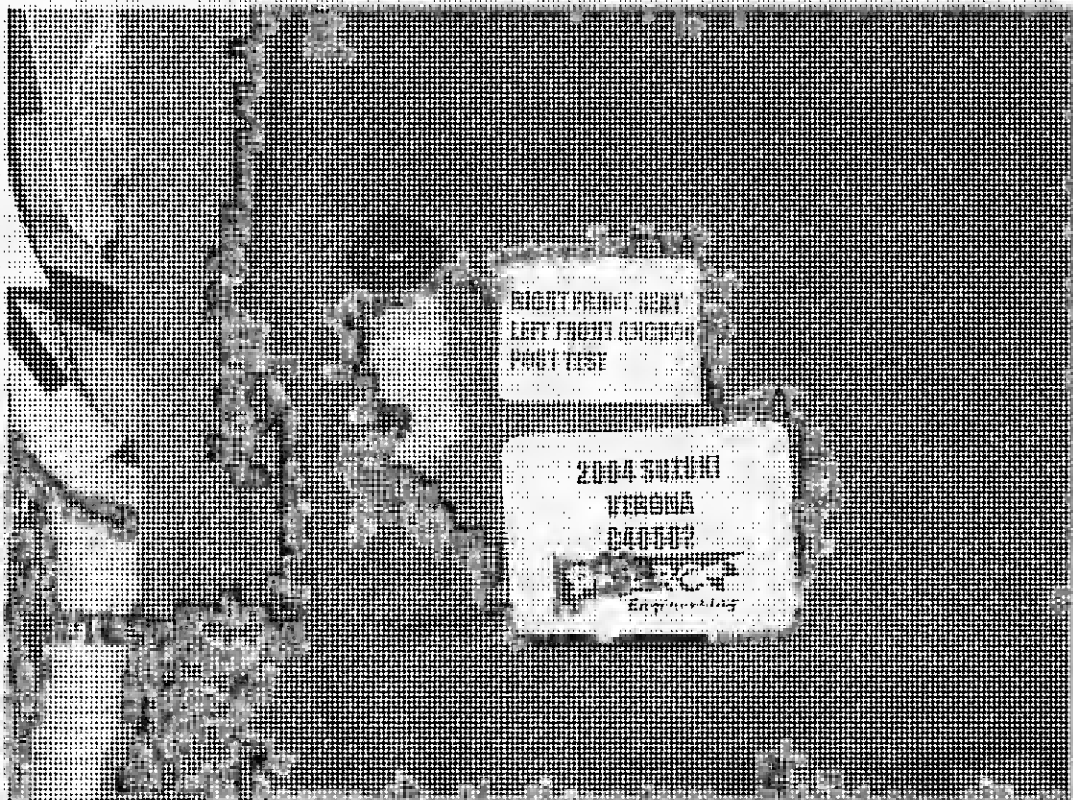


Figure A-60: Floor Plan Anchor, Right Front Seat, Post-Test

A-61

2014 SEVEN

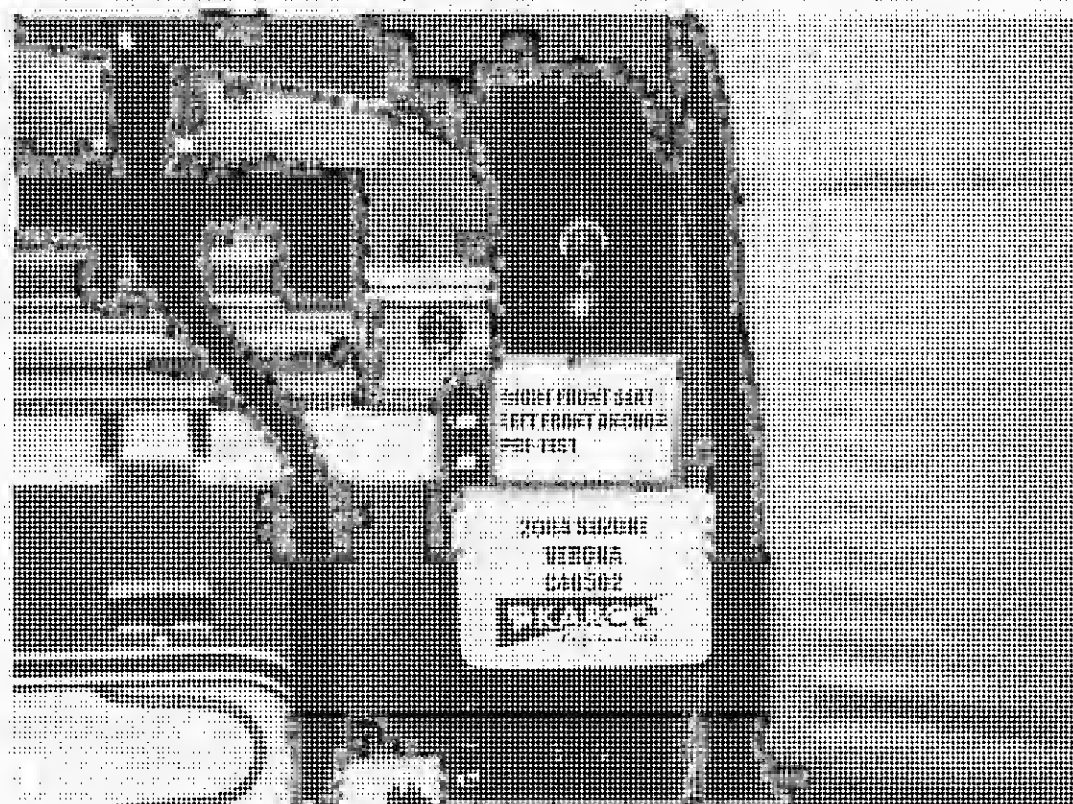


Figure A-61. Seat Anchor, Right Front Seat, Pre-Test

A-62

2014 SEVEN



Figure A-62. Seat Anchor, Right Front Seat, Post-Test

A-63

257-KAR-04-005

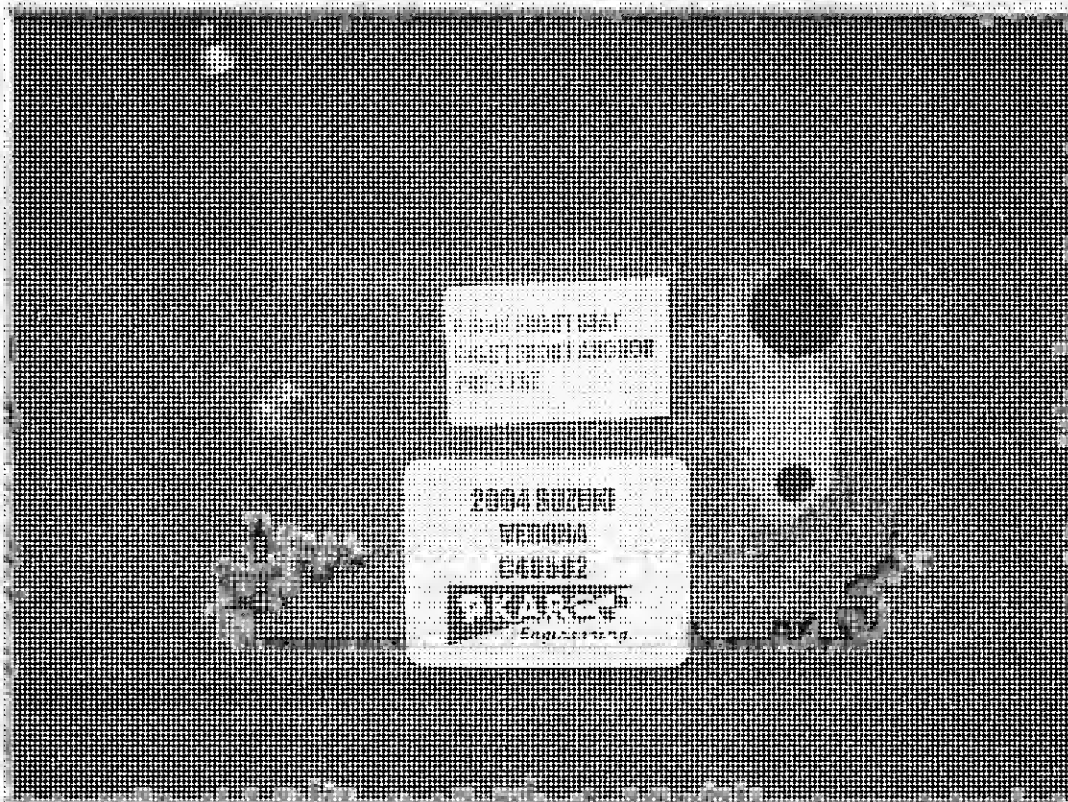


Figure A-63: Floor Plan Anchor, Right Front Seat, Pre-Test.

A-64

257-KAR-04-005

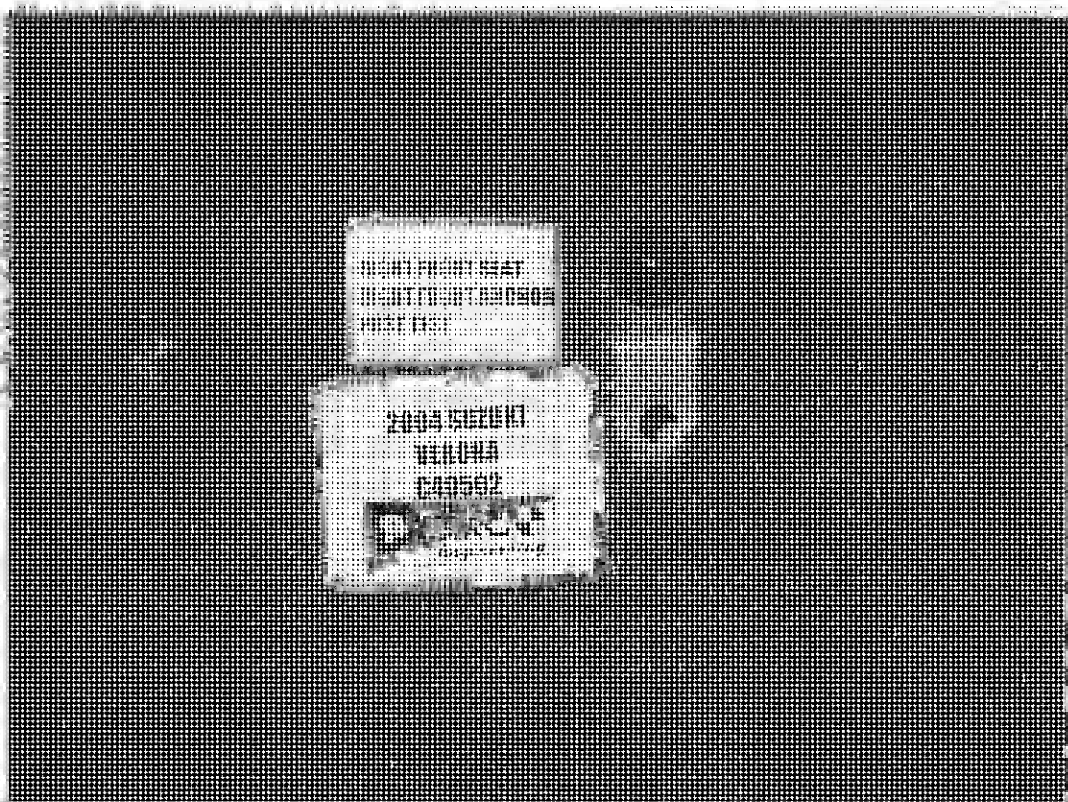


Figure A-64: Floor Plan Anchor, Right Front Seat, Post-Test.

A-55

207 MAR 06-035

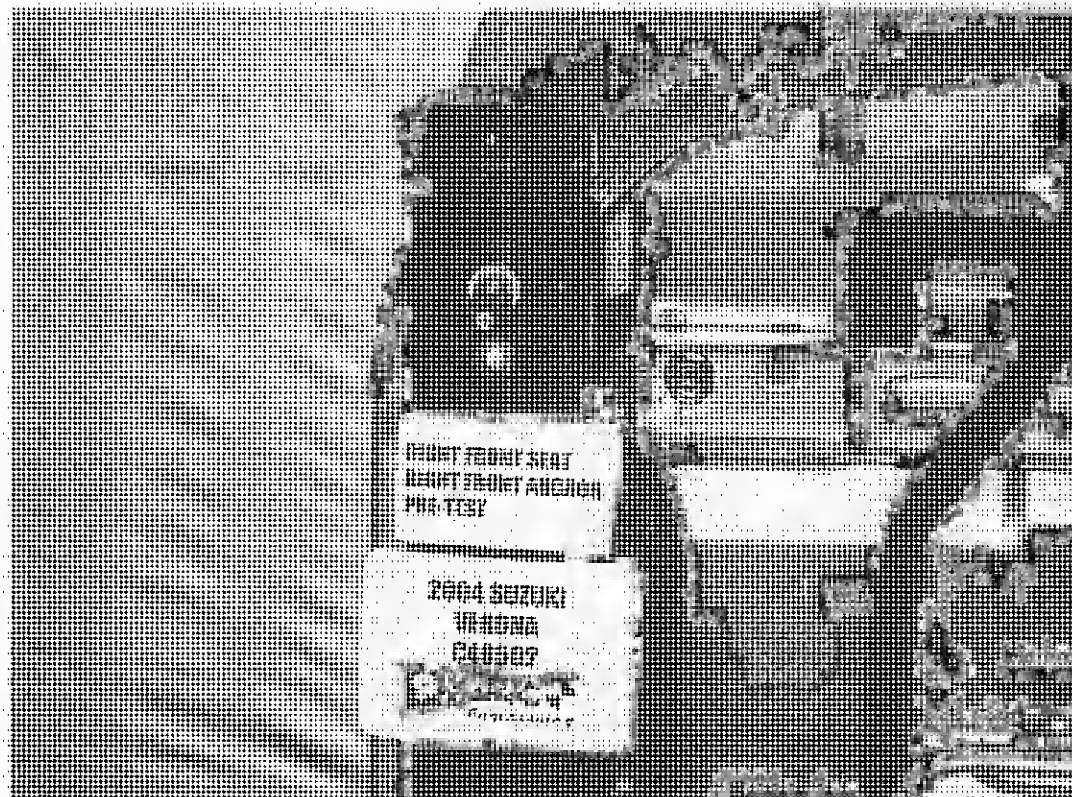


Figure A-65: Seat Anchor, Right Front Seat, Pre-Test

A-55

207 MAR 06-035

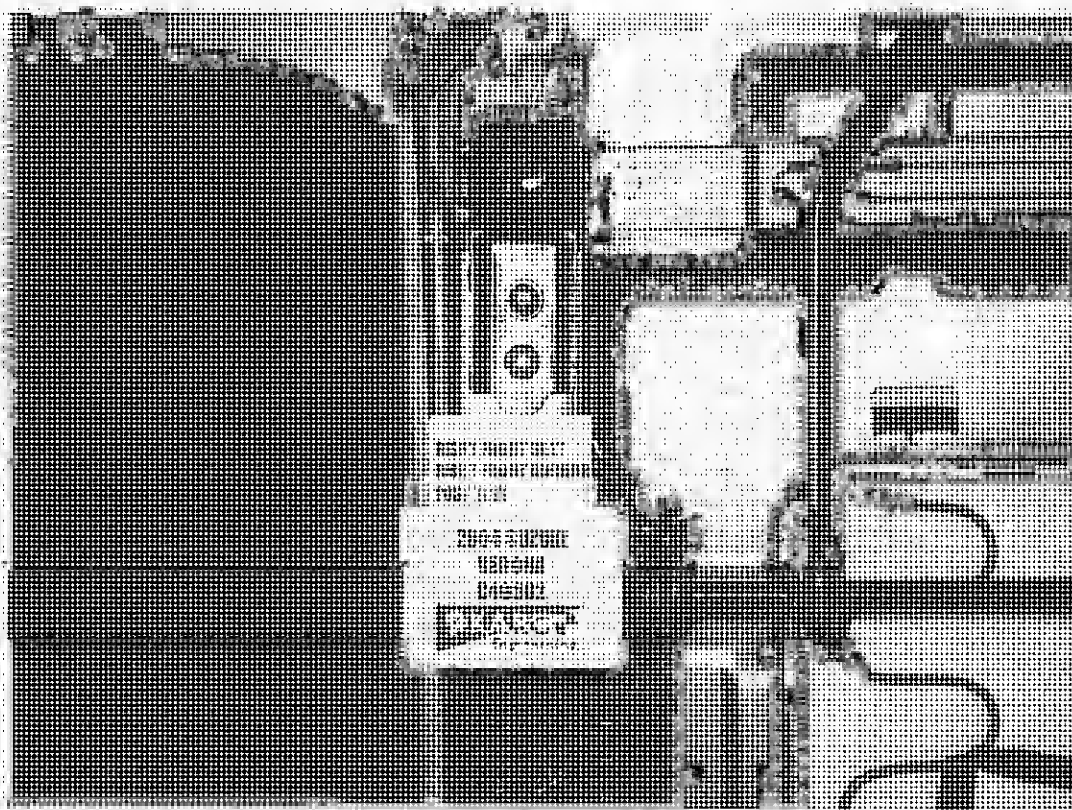


Figure A-66: Seat Anchor, Right Front Seat, Post-Test

7-27

2004 SUZUKI
VERONA

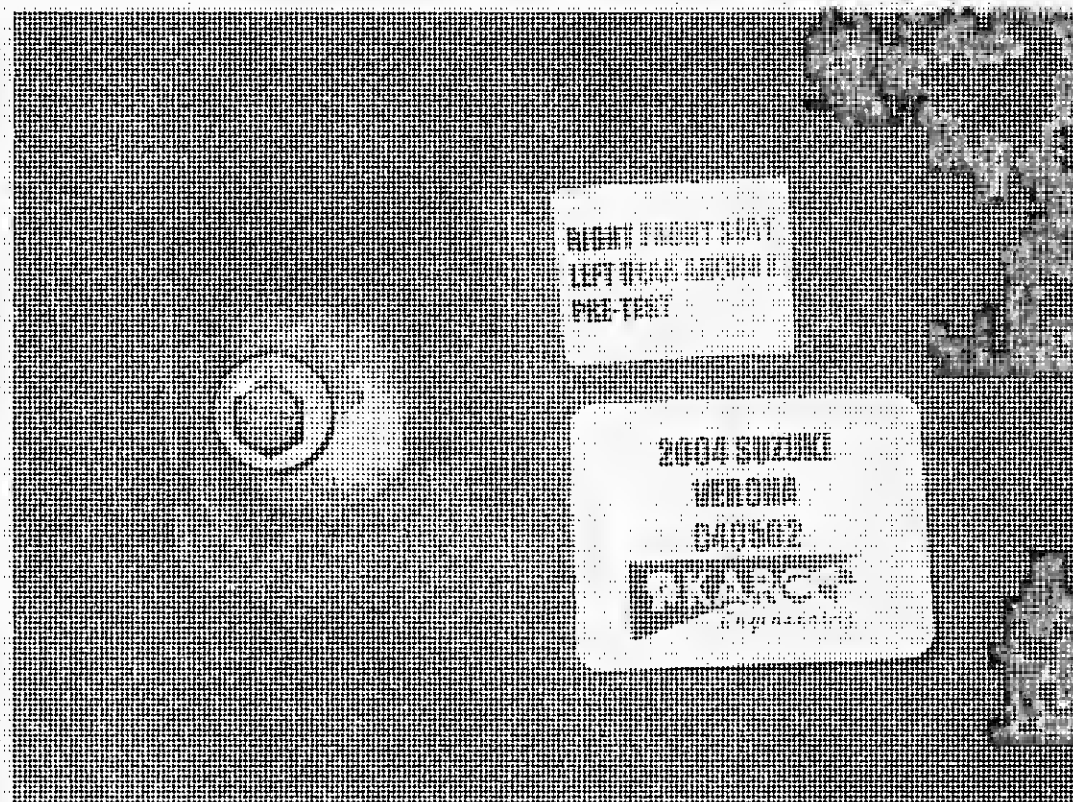


Figure A-67. Floor Pan Anchor, Right Front Seat, Pre-Test

7-28

2004 SUZUKI
VERONA

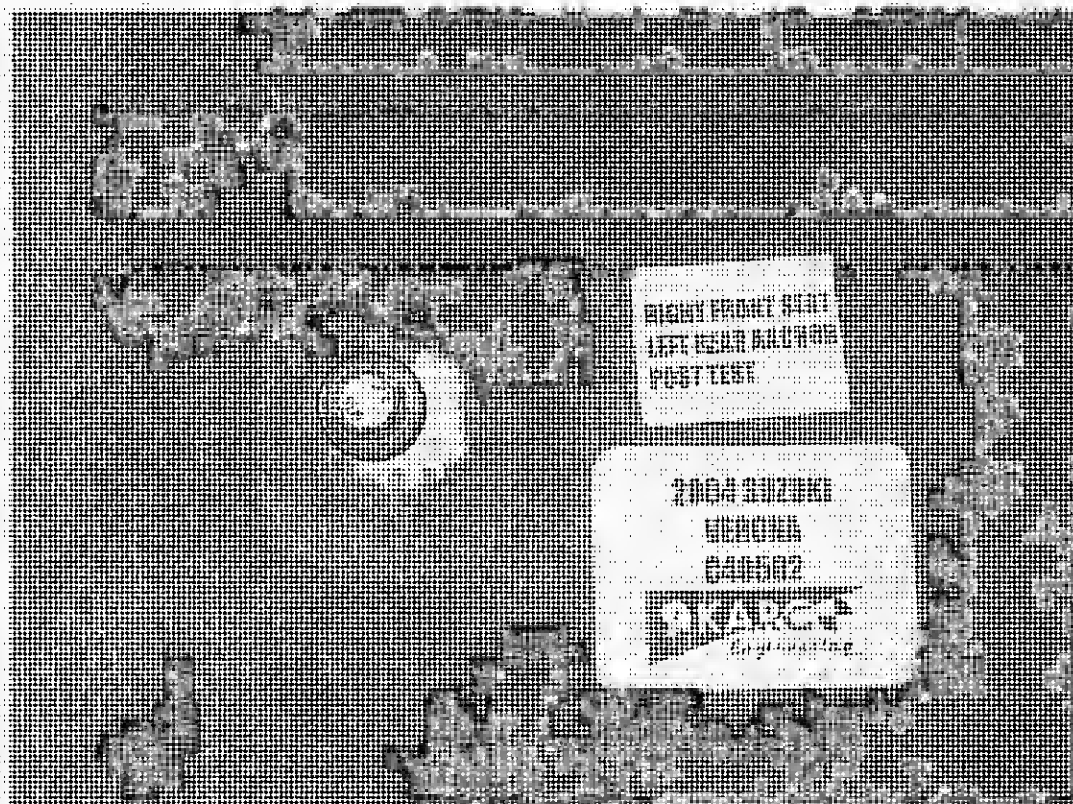


Figure A-68. Floor Pan Anchor, Right Front Seat, Post-Test

683

500-10-10-00-02

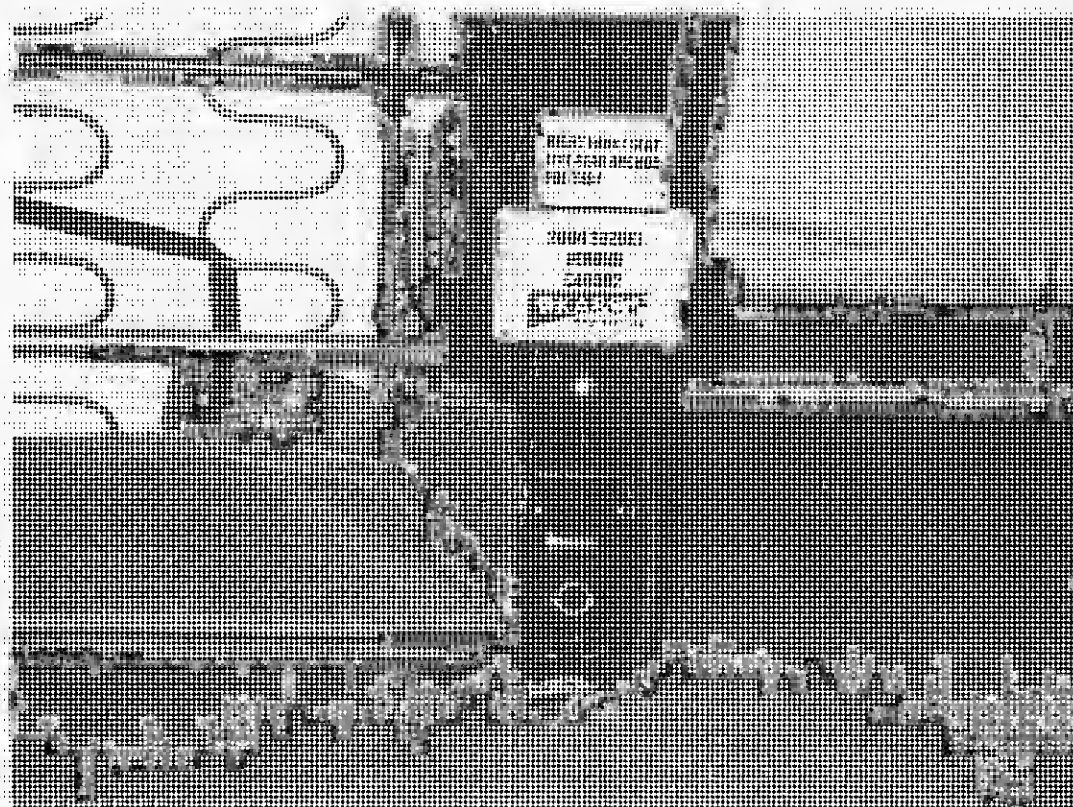


Figure A-69: Seat Anchor, Right Front Seat, Pre-Test

684

500-10-10-00-03

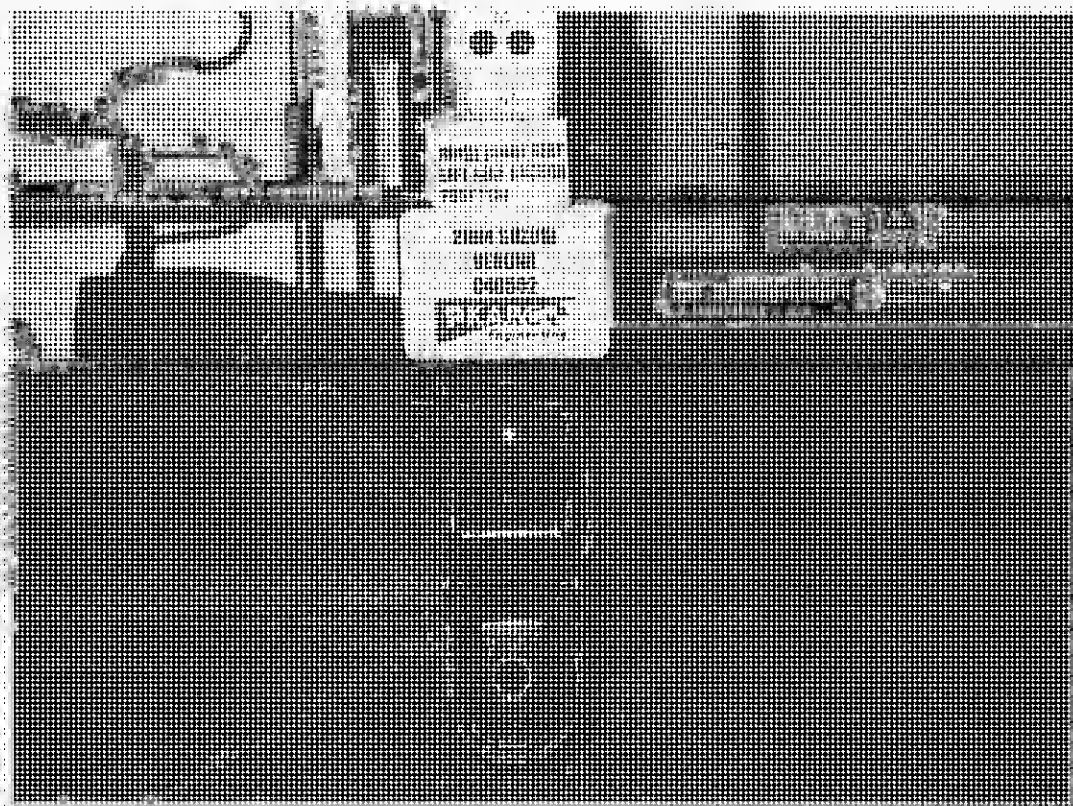


Figure A-70: Seat Anchor, Right Front Seat, Post-Test

A-71

207 KHS-04-025

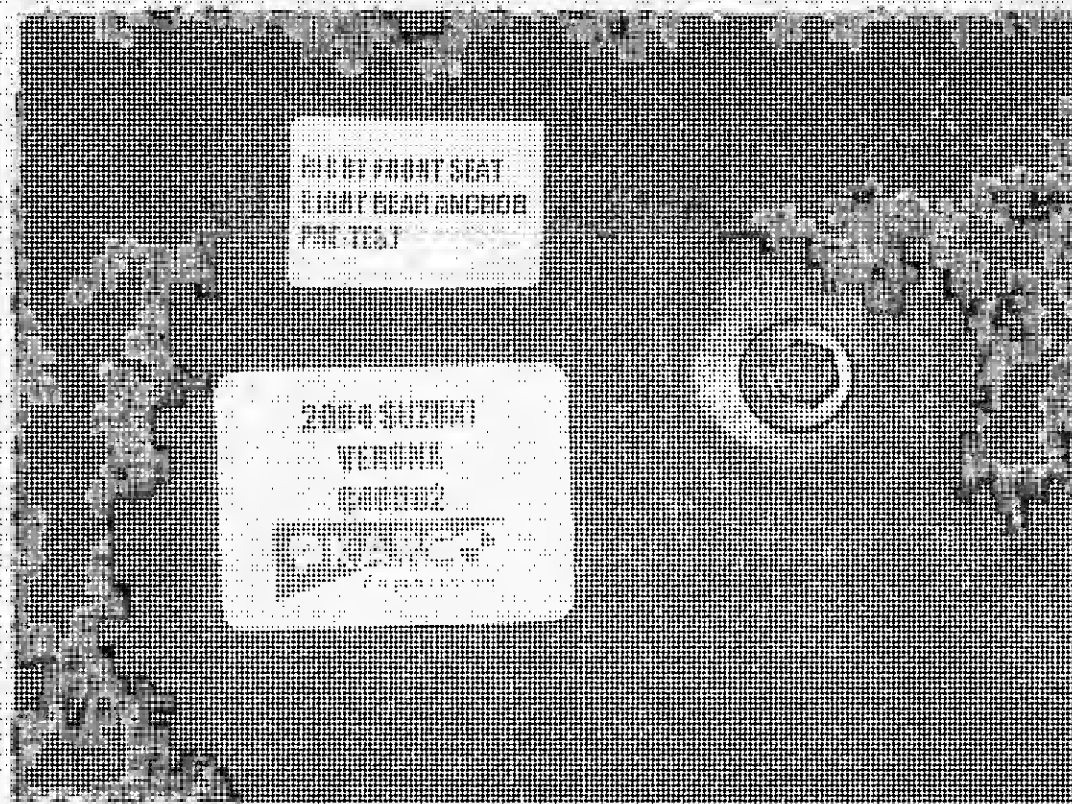


Figure A-71. Floor Pan Anchor, Right Front Seat, Pre-Test

A-72

207 KHS-04-025

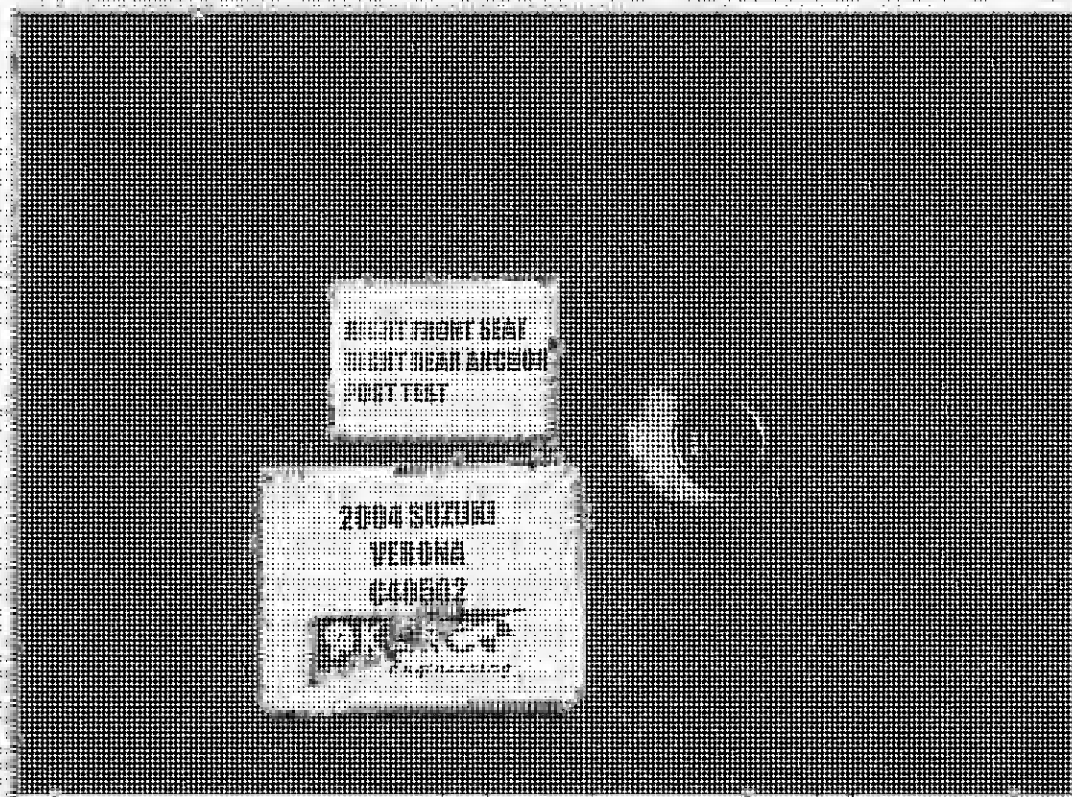


Figure A-72. Floor Pan Anchor, Right Front Seat, Post-Test

A-73

DOT CASE 94-025

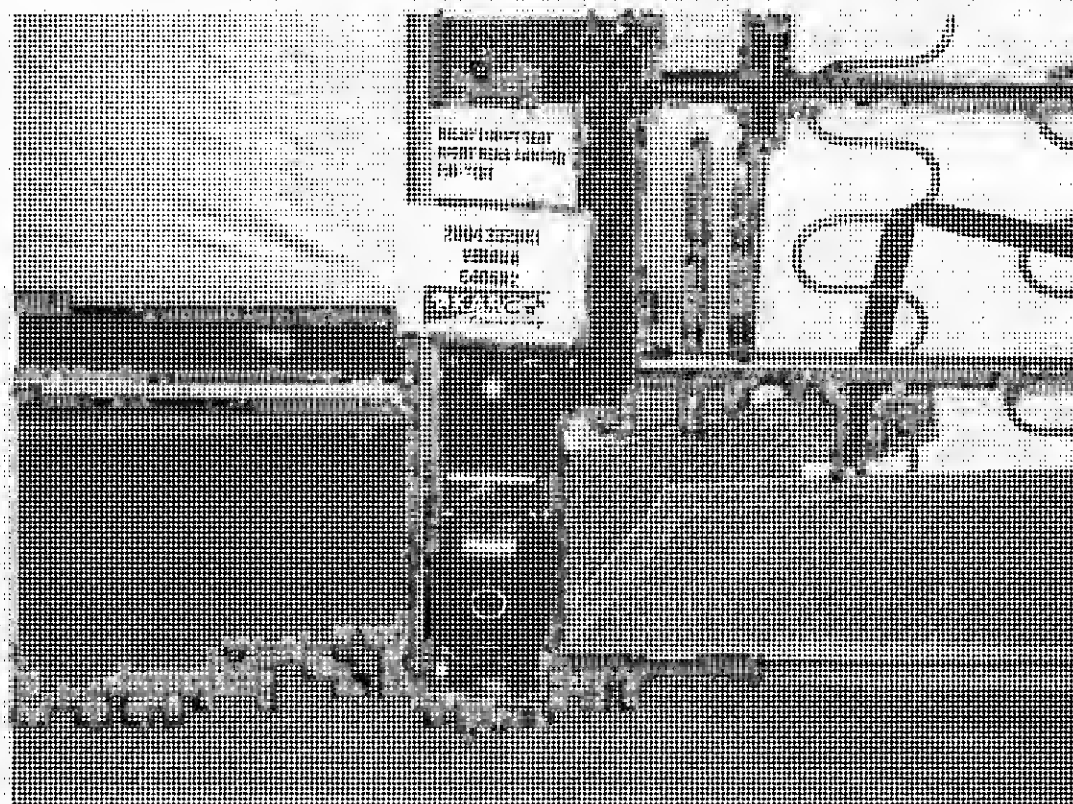


Figure A-73: Seal Anchor, Right Front Seal, Pre-Test

A-74

DOT CASE 94-025



Figure A-74: Seal Anchor, Right Front Seal, Post-Test

A-75

207 KAR 34-525

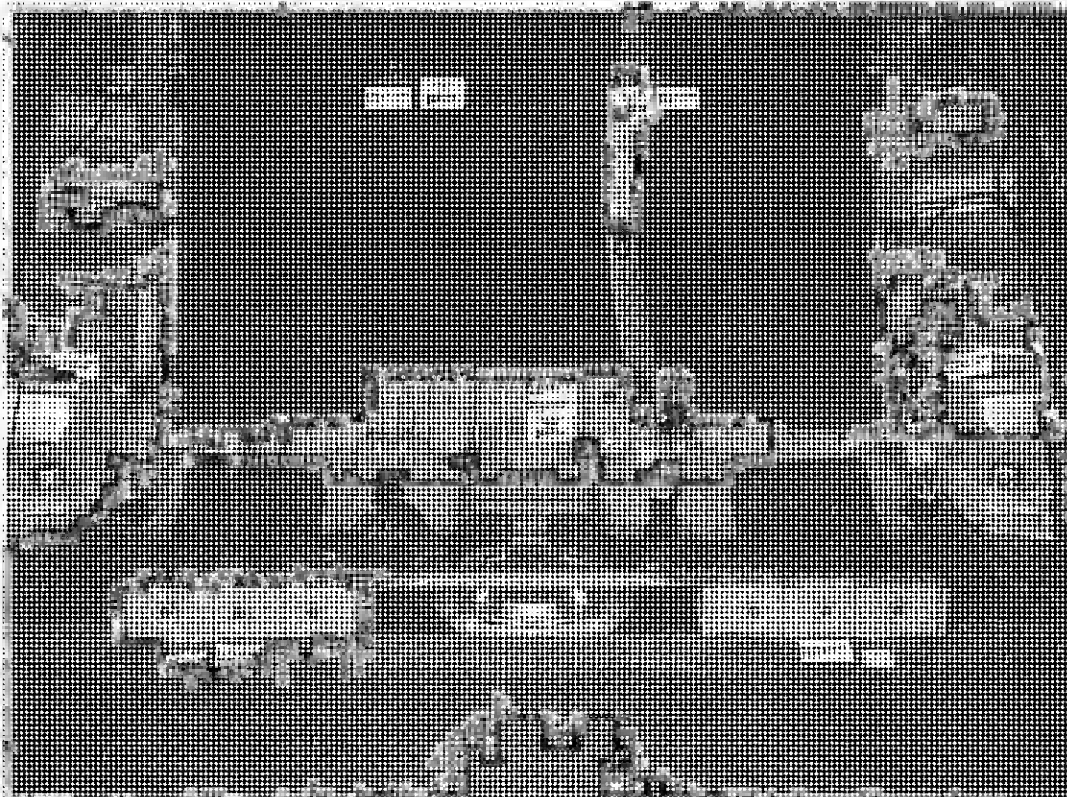


Figure A-75: Floor Pan Anchors, Rear Seat, Seat Cushion Overall, Pre-Test

A-76

207 KAR 34-525

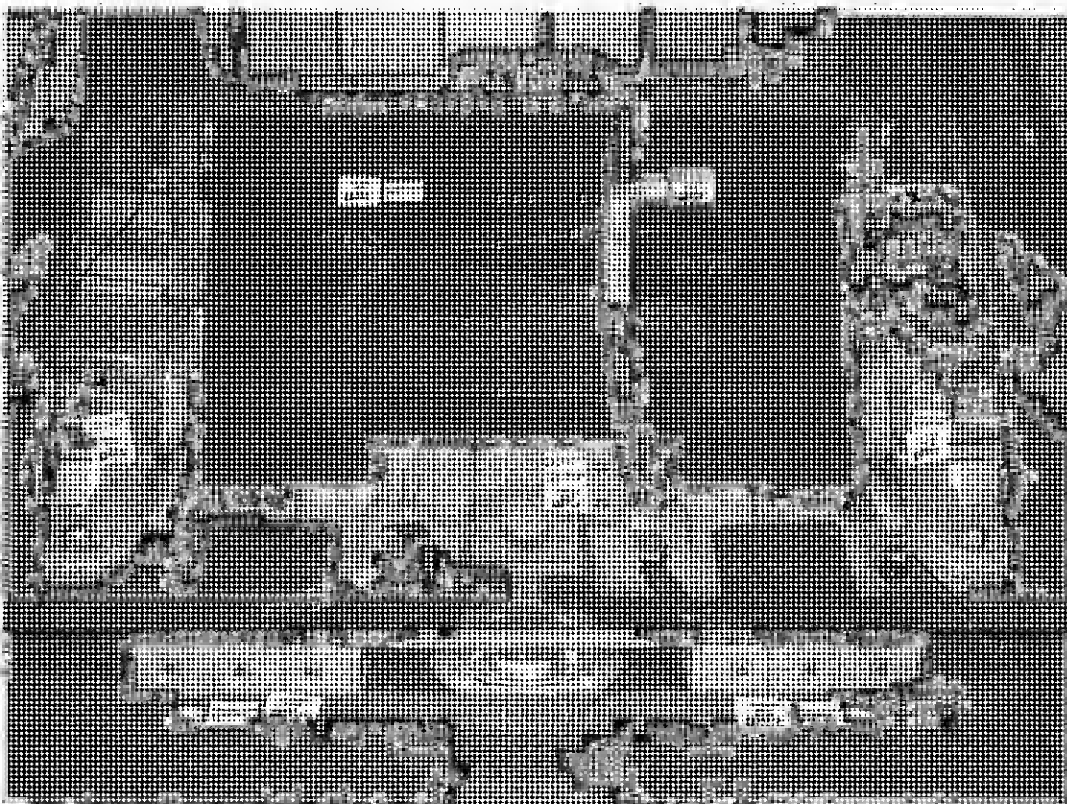


Figure A-76: Floor Pan Anchors, Rear Seat, Seat Cushion Overall, Post-Test

A-77

207-16-95-06-005

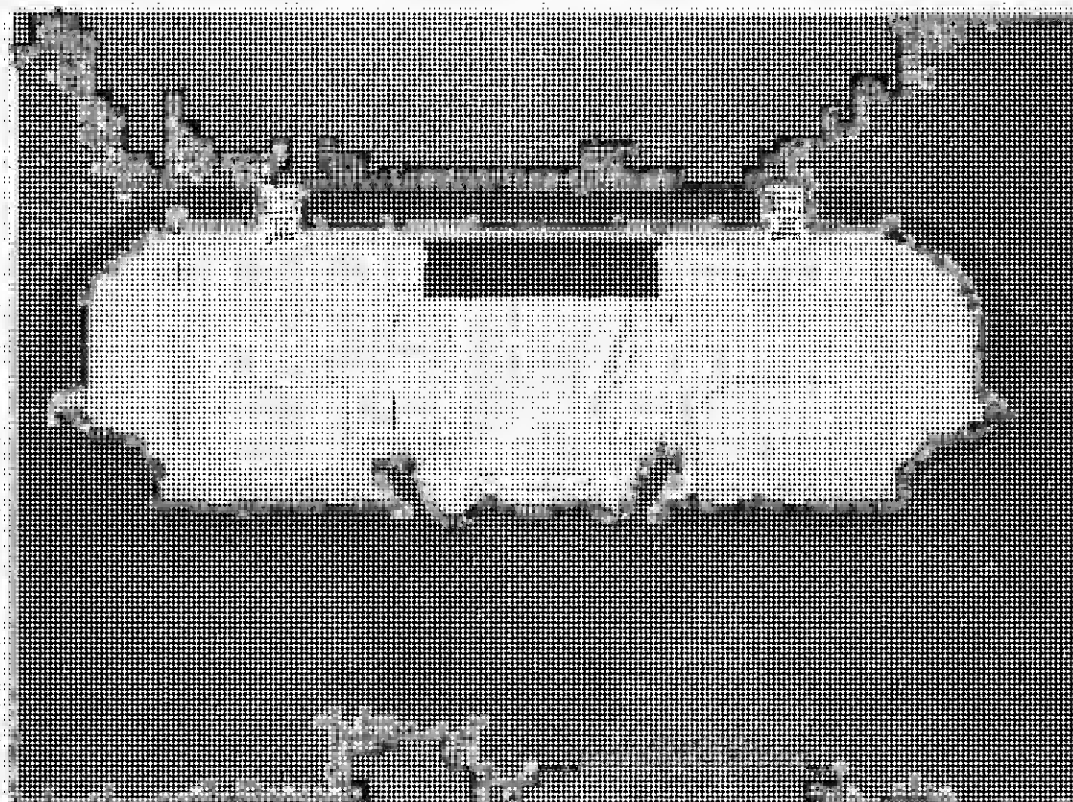


Figure A-77: Seat Anchors, Rear Seat, Seat Cushion Overall, Pre-Test

A-78

207-16-95-06-005

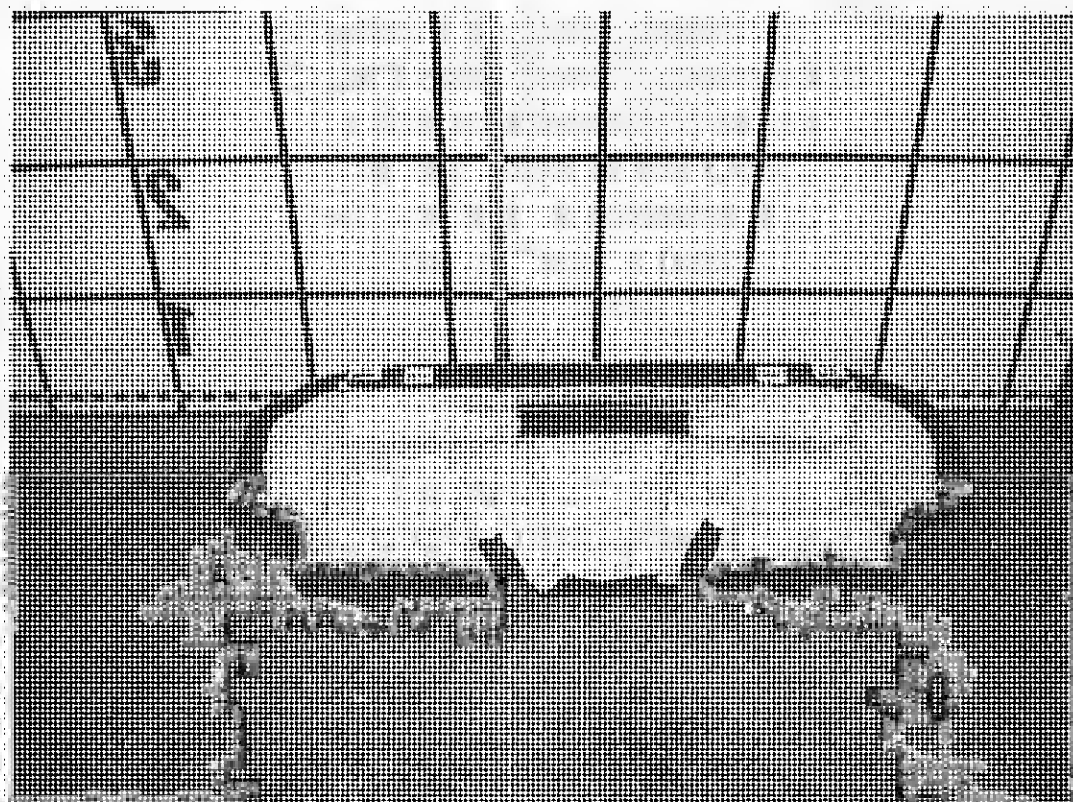


Figure A-78: Seat Anchors, Rear Seat, Seat Cushion Overall, Post-Test

A-79

2074-3-3-04-005

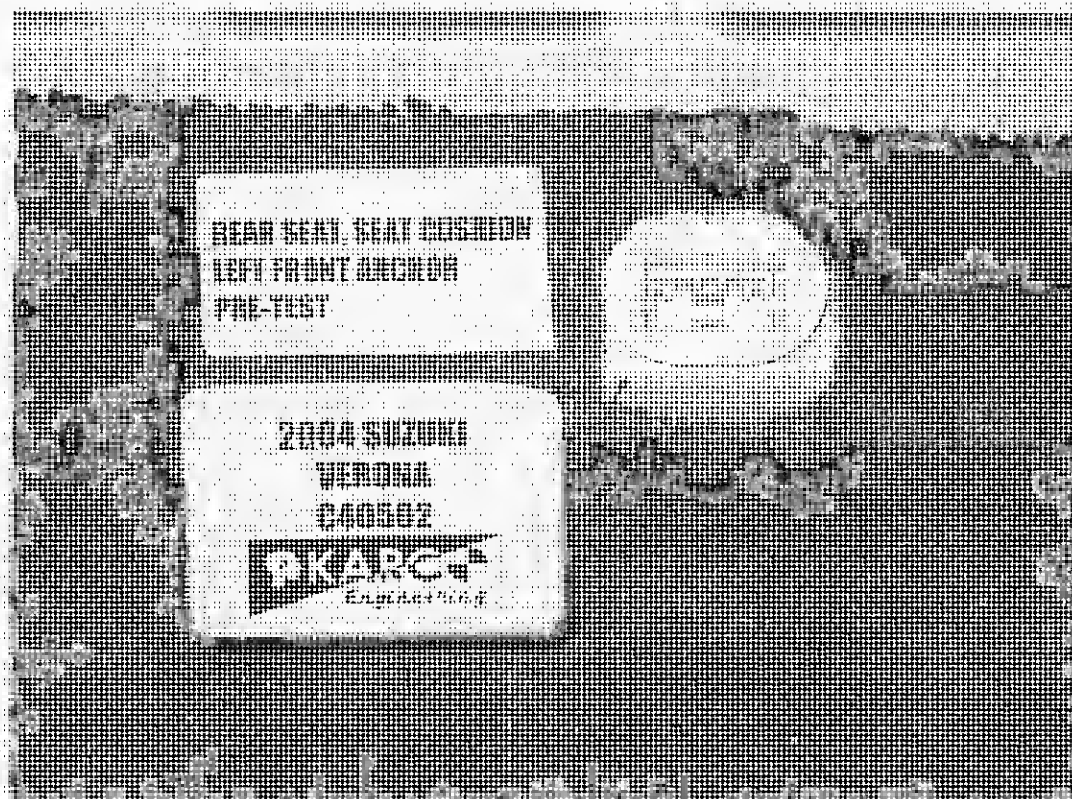


Figure A-79: Floor Plan Anchor, Rear Seat, Seat Cushion, Pre-Test

A-80

2074-3-3-04-005



Figure A-80: Floor Plan Anchor, Rear Seat, Seat Cushion, Post-Test

A-81

207-506-24-005



Figure A-81: Seat Anchor, Rear Seat, Seat Cushion, Pre-Test

A-82

207-506-24-005

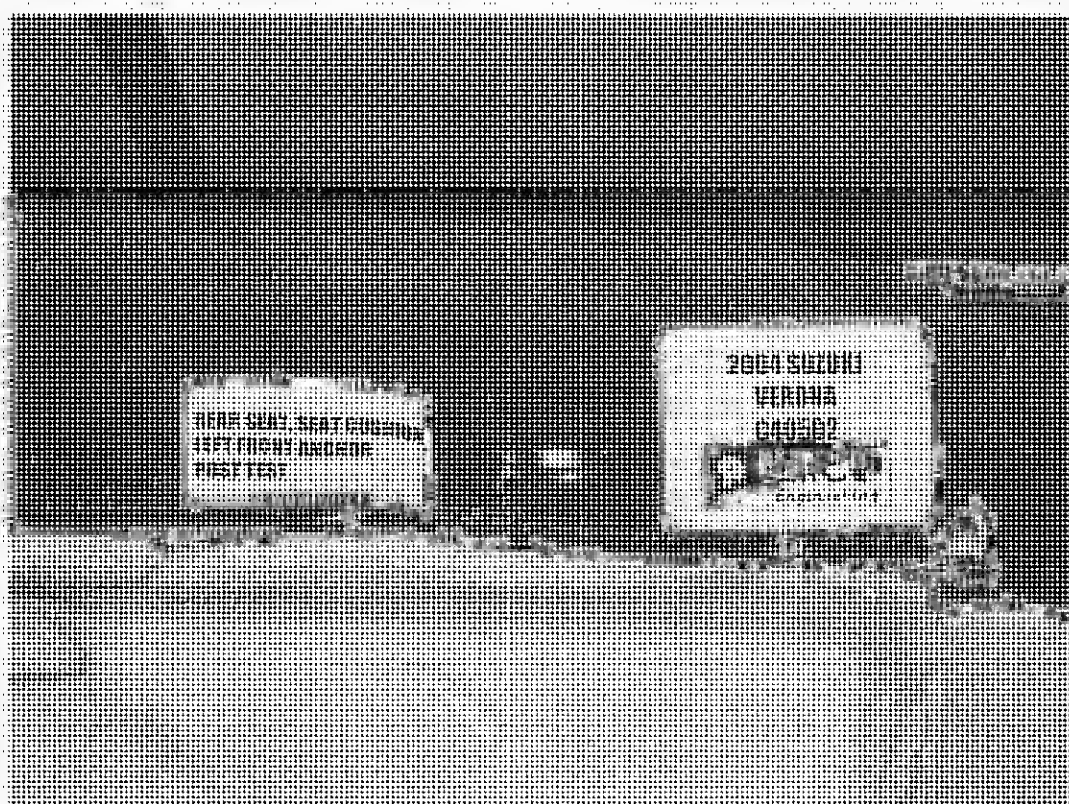


Figure A-82: Seat Anchor, Rear Seat, Seat Cushion, Post-Test

2007 KARC 06-025

2007 KARC 06-025

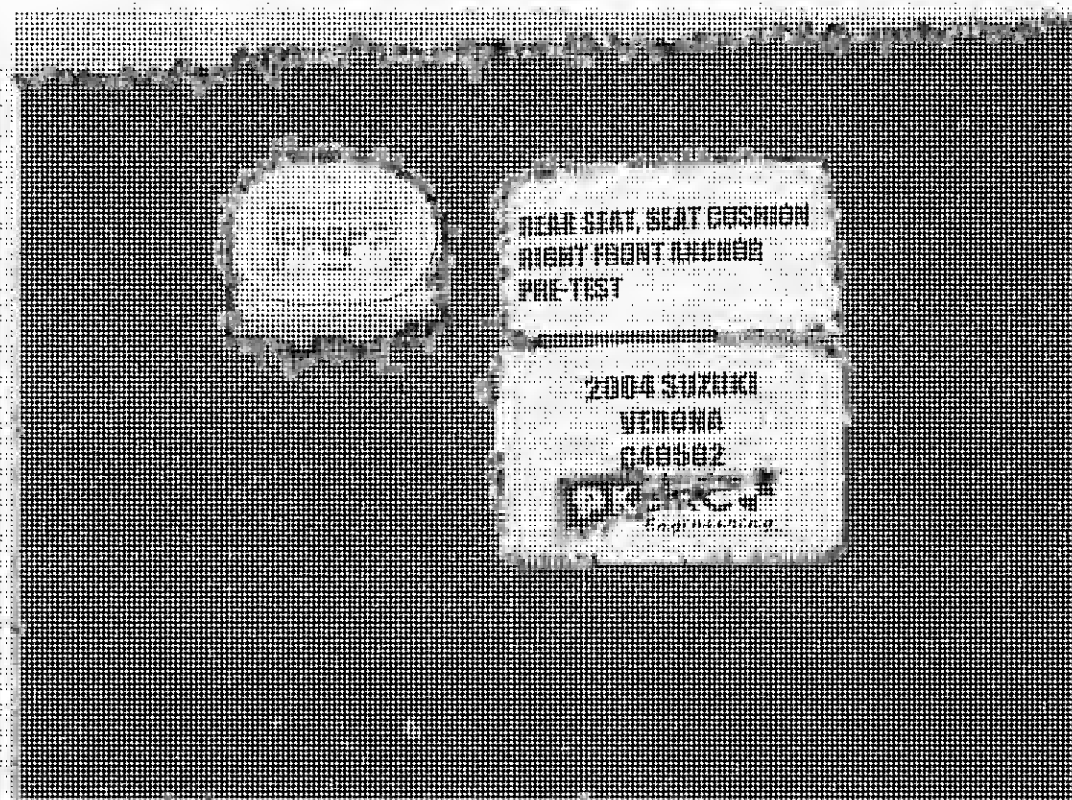


Figure A-83: Floor Pan Anchor, Rear Seat, Seat Cushion, Pre-Test

2007 KARC 06-025

2007 KARC 06-025



Figure A-84: Floor Pan Anchor, Rear Seat, Seat Cushion, Post-Test

4-00

2004-08-04-005

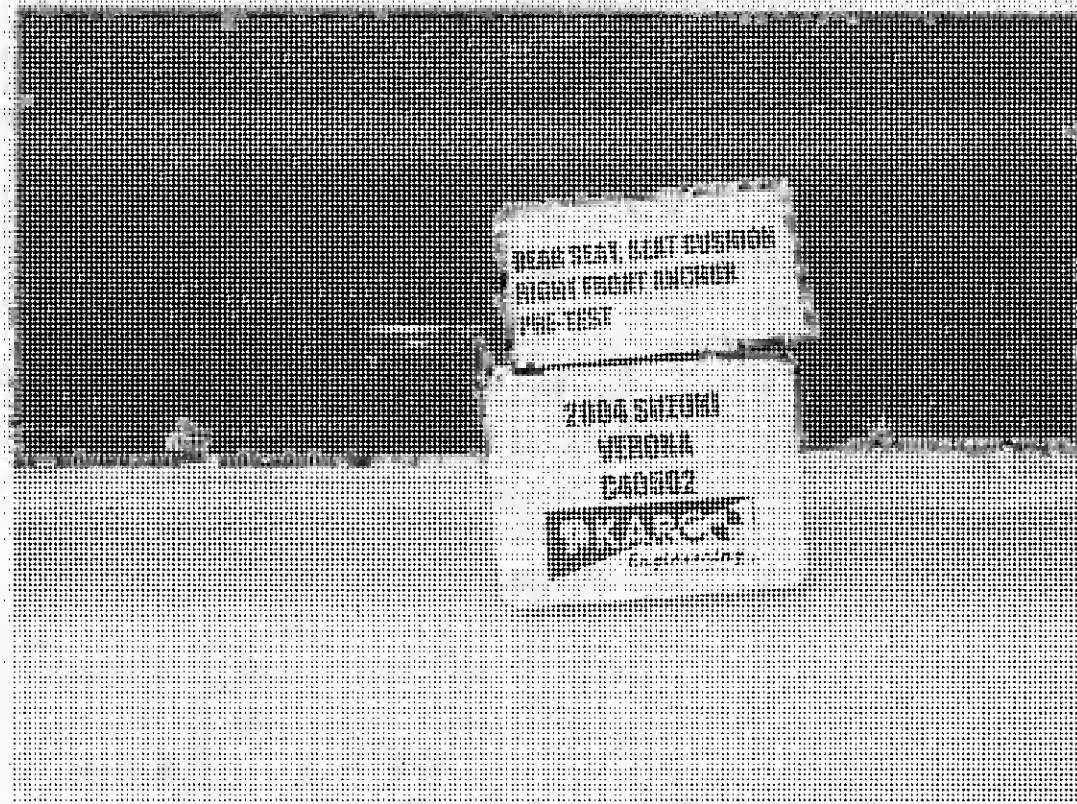


Figure A-59. Seal Anchor, Rear Seat, Seat Cushion, Pre-Test

4-00

2004-08-04-005



Figure A-60. Seal Anchor, Rear Seat, Seat Cushion, Post-Test

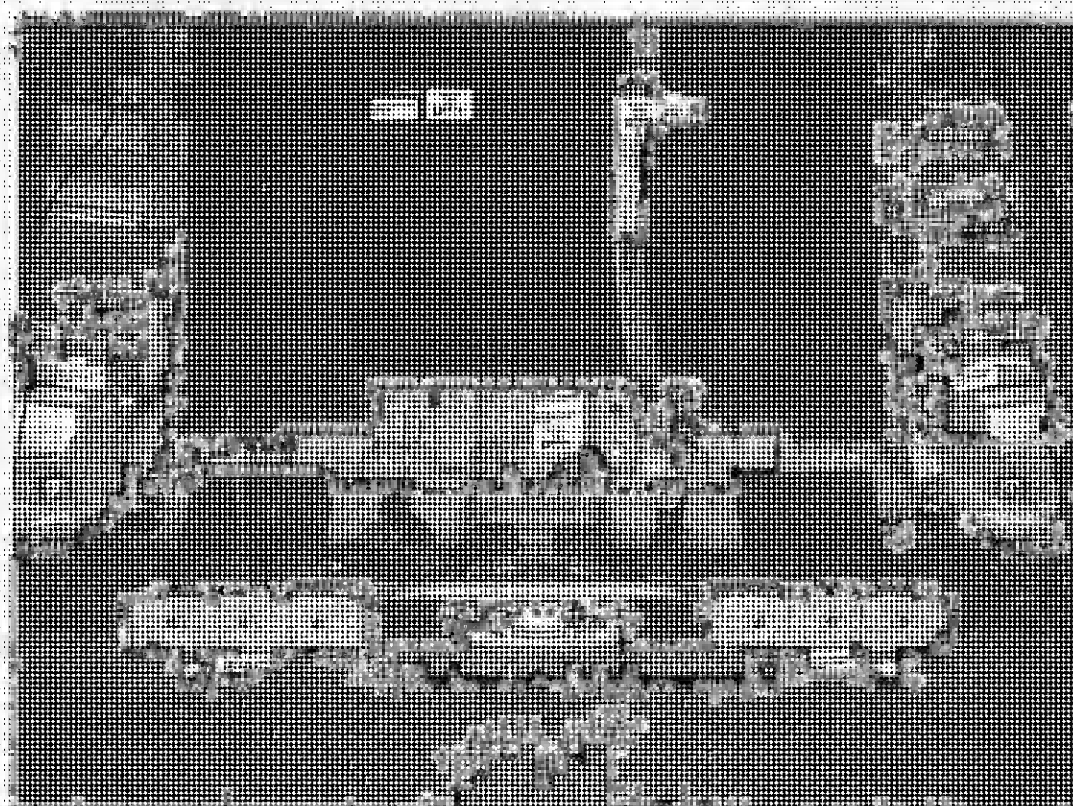


Figure A-87: Floor Plan Anchors, Rear Seat, Left Seat Back Overlap, Pre-Test

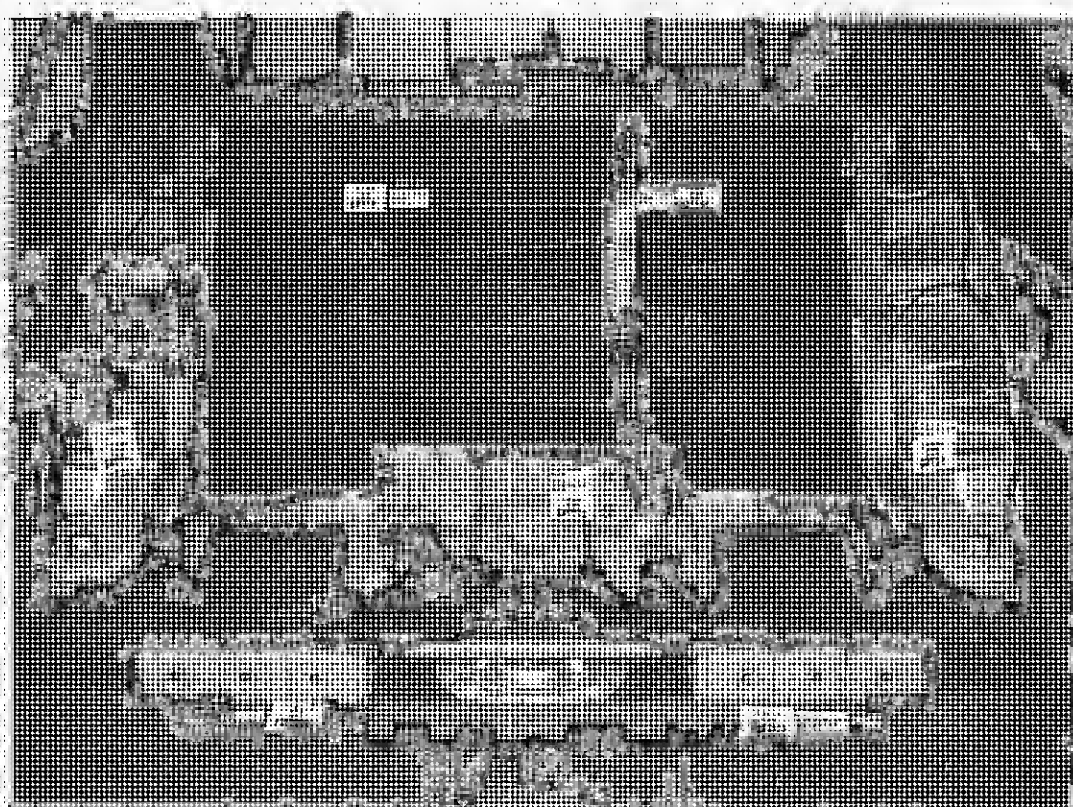


Figure A-88: Floor Plan Anchors, Rear Seat, Left Seat Back Overlap, Post-Test

A-89

207-KAS-06-005

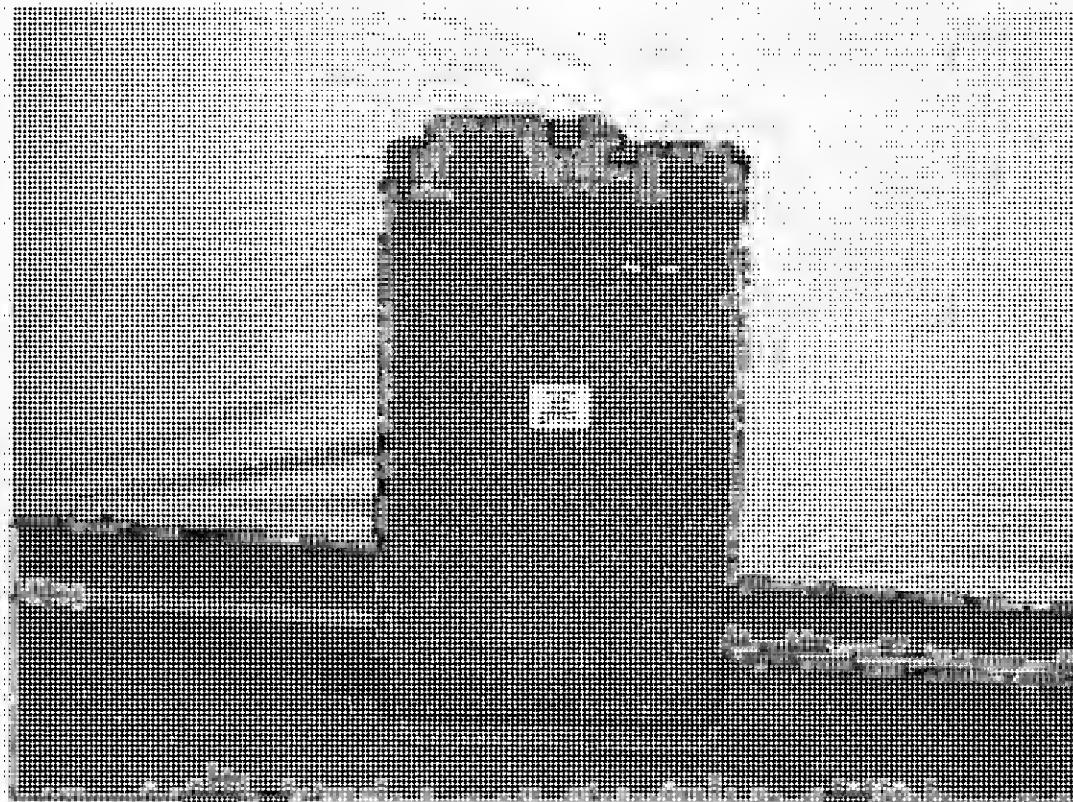


Figure A-89: Seat Anchors, Rear Seat, Left Seat Back Overall, Pre-Test

A-90

207-KAS-06-005

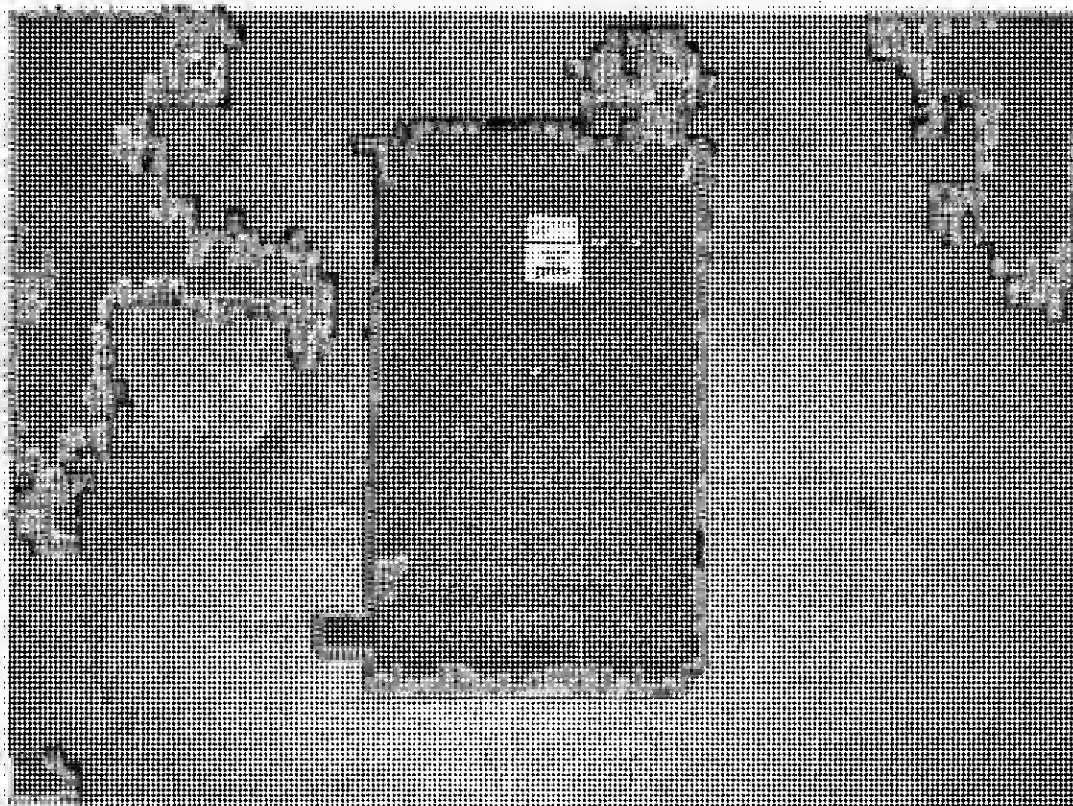


Figure A-90: Seat Anchors, Rear Seat, Left Seat Back Overall, Post-Test

14-01

207-107-01-002

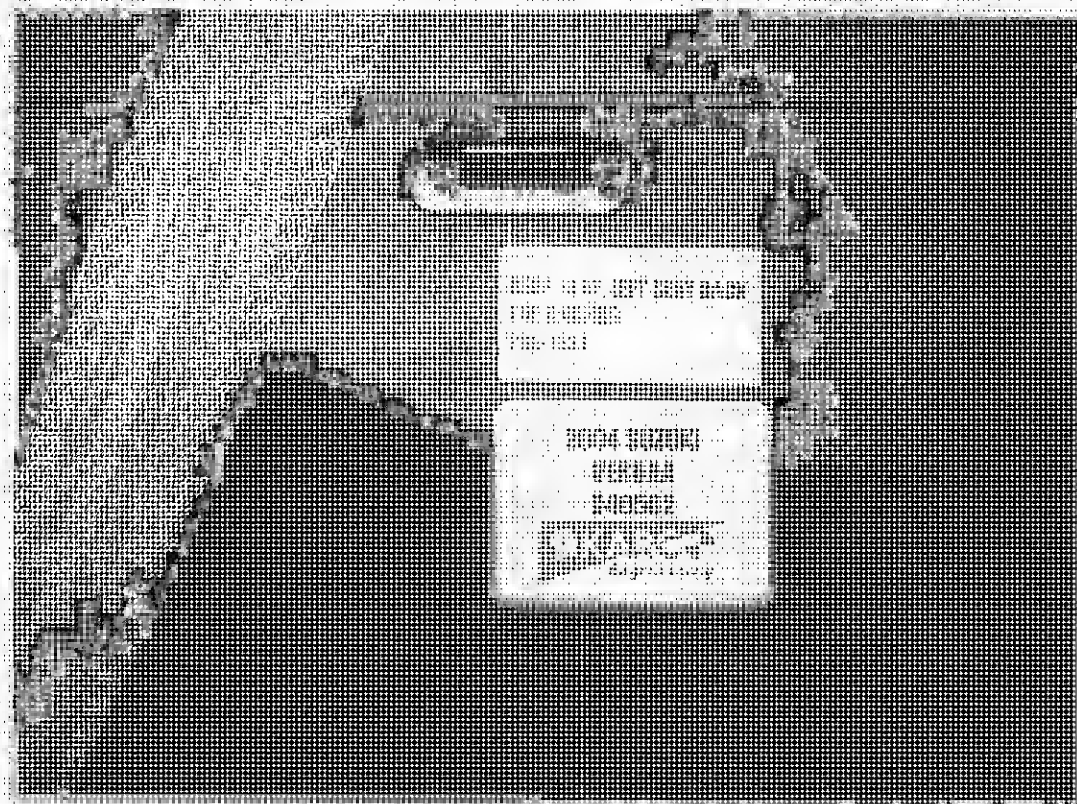


Figure A-91: Floor Pan Anchor, Rear Seat, Left Seat Back, Pre-Test

14-02

207-107-01-002

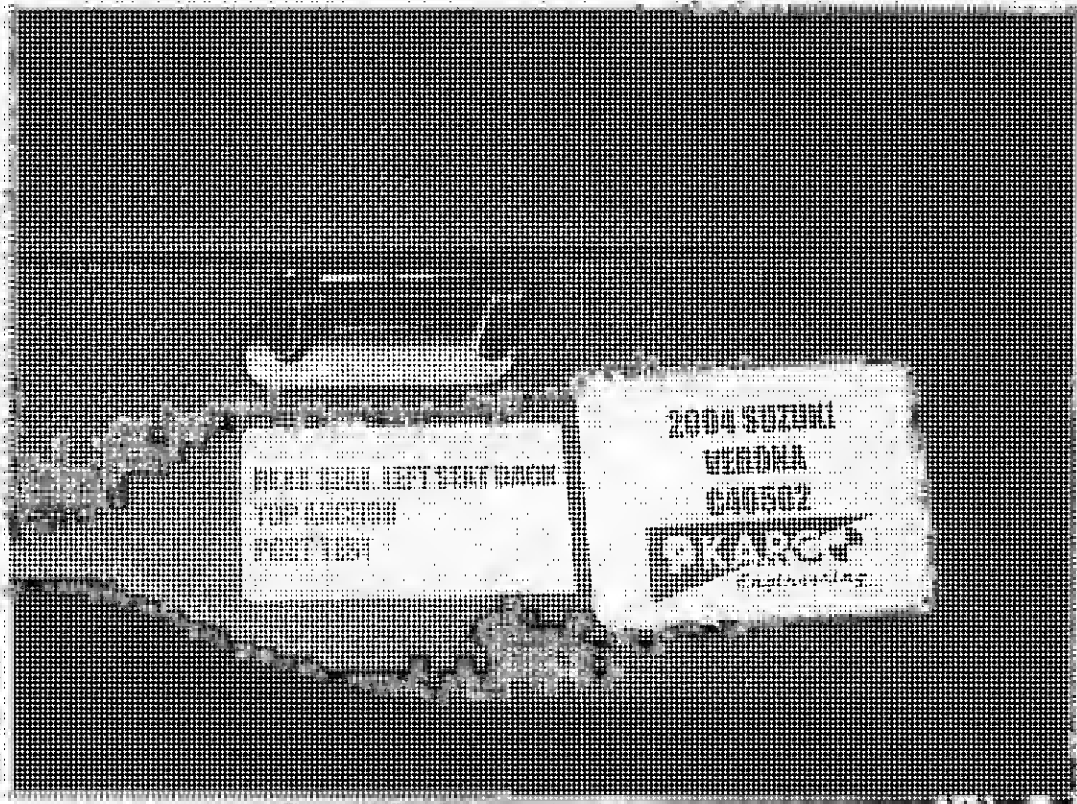


Figure A-92: Floor Pan Anchor, Rear Seat, Left Seat Back, Post-Test

1-55

307-KC-2-D-005

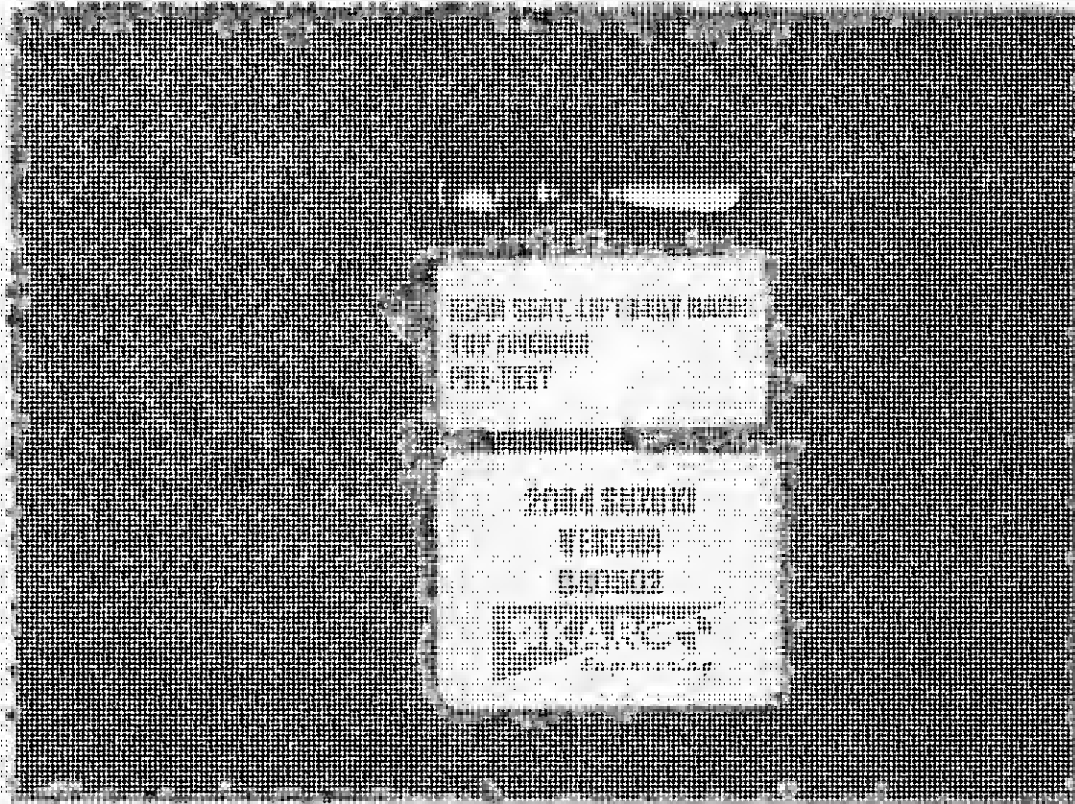


Figure A-93. Seal Anchor, Rear Seat, Left Seat Back, Pre-Test

1-54

307-KC-2-D-006

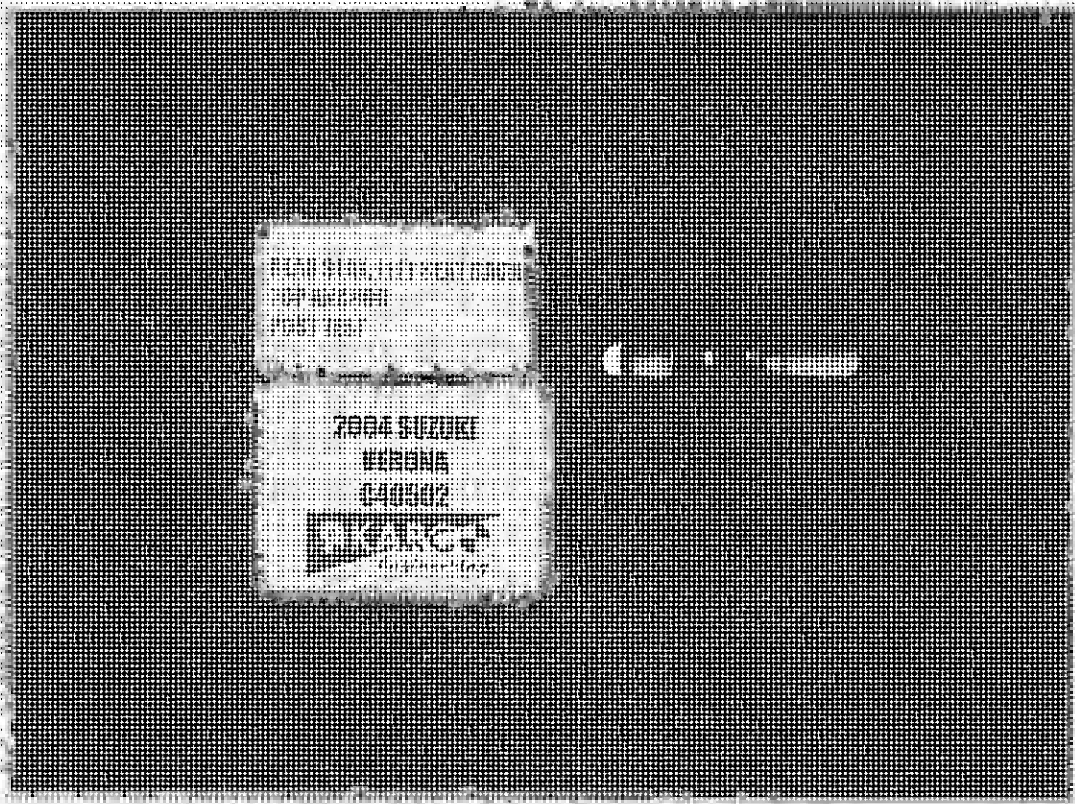


Figure A-94. Seal Anchor, Rear Seat, Left Seat Back, Post-Test

1-51

207-KA2C-06-075

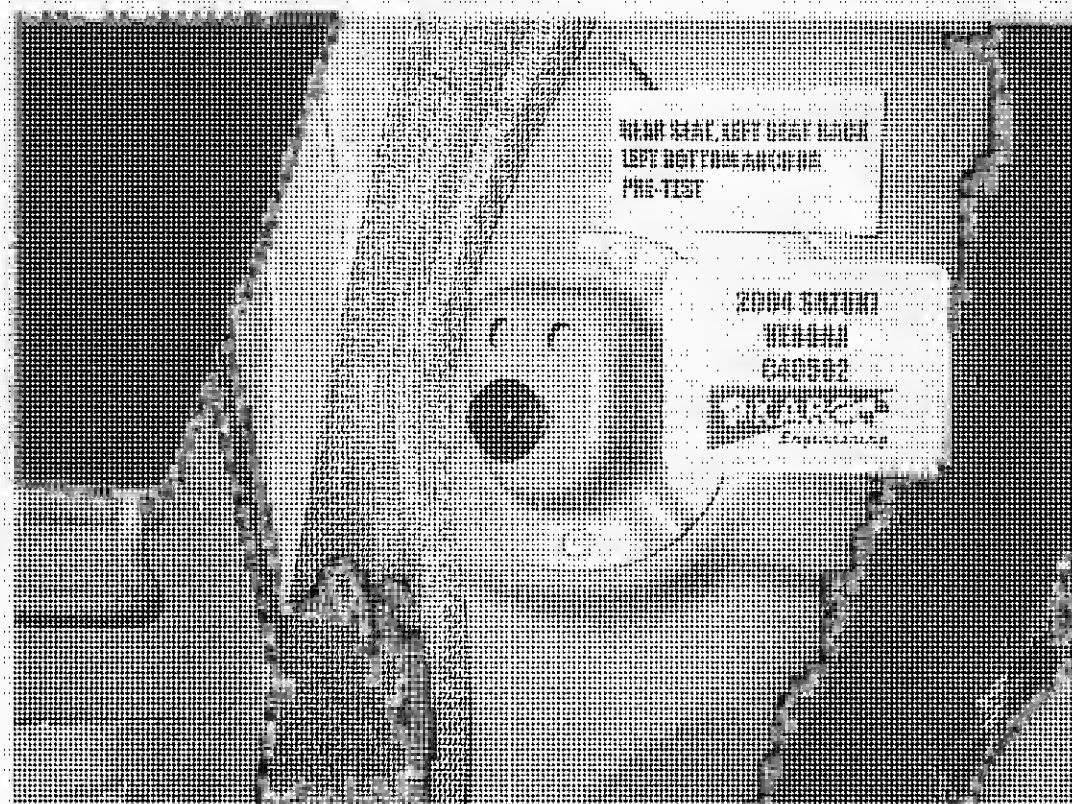


Figure A-95. Floor Pan Anchor, Rear Seat, Left Seat Back, Pre-Test

1-51

207-KA2C-06-075

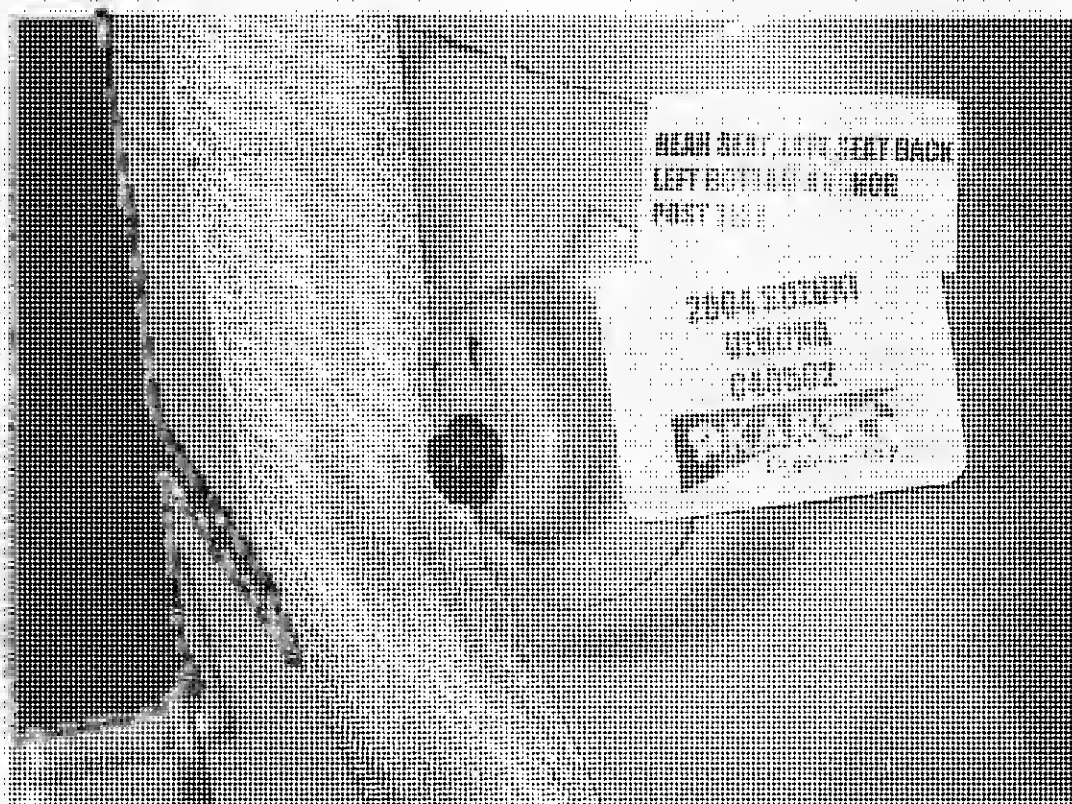


Figure A-96. Floor Pan Anchor, Rear Seat, Left Seat Back, Post-Test

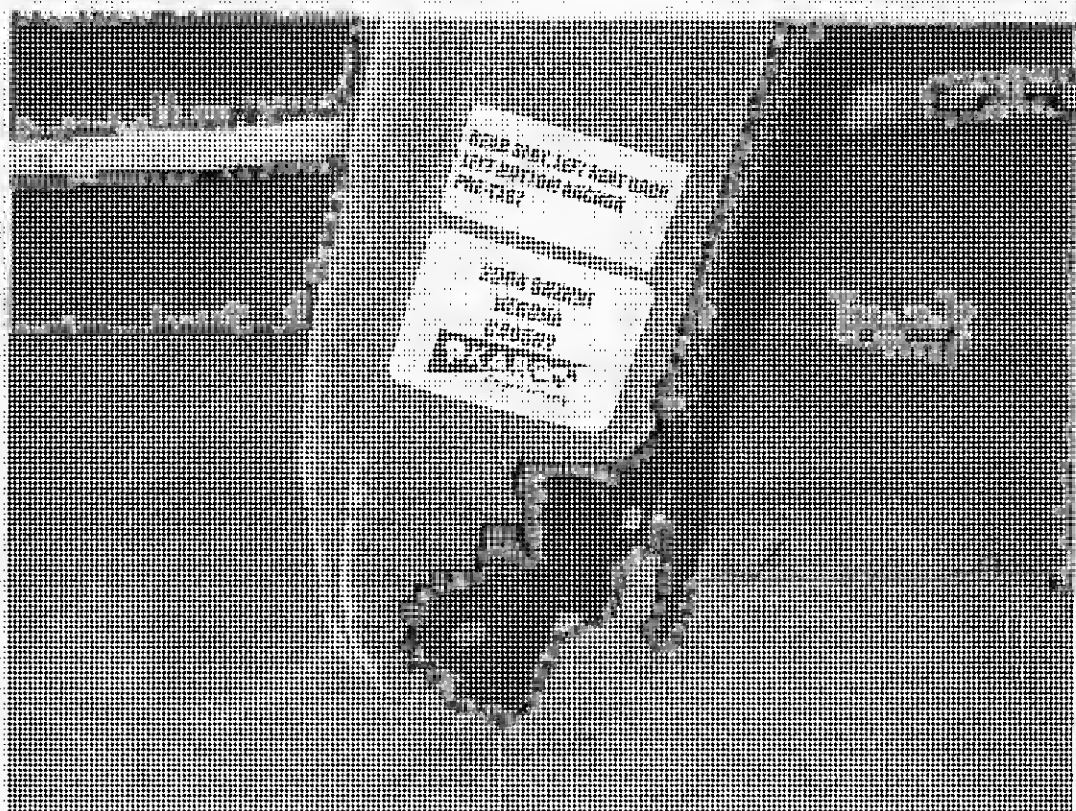


Figure A-17: Seat Anchor, Rear Seat, Left Gear Back, Pre-Test

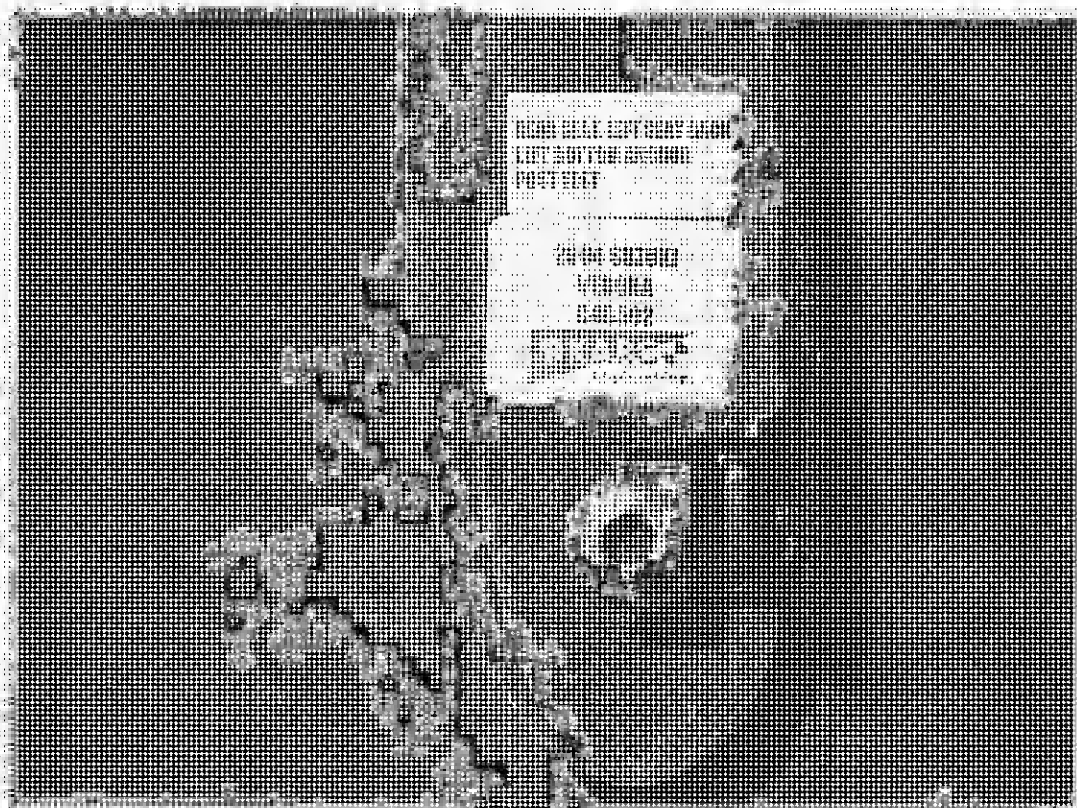


Figure A-18: Seat Anchor, Rear Seat, Left Gear Back, Post-Test

A-98

2004 Suzuki Verona
C405B2

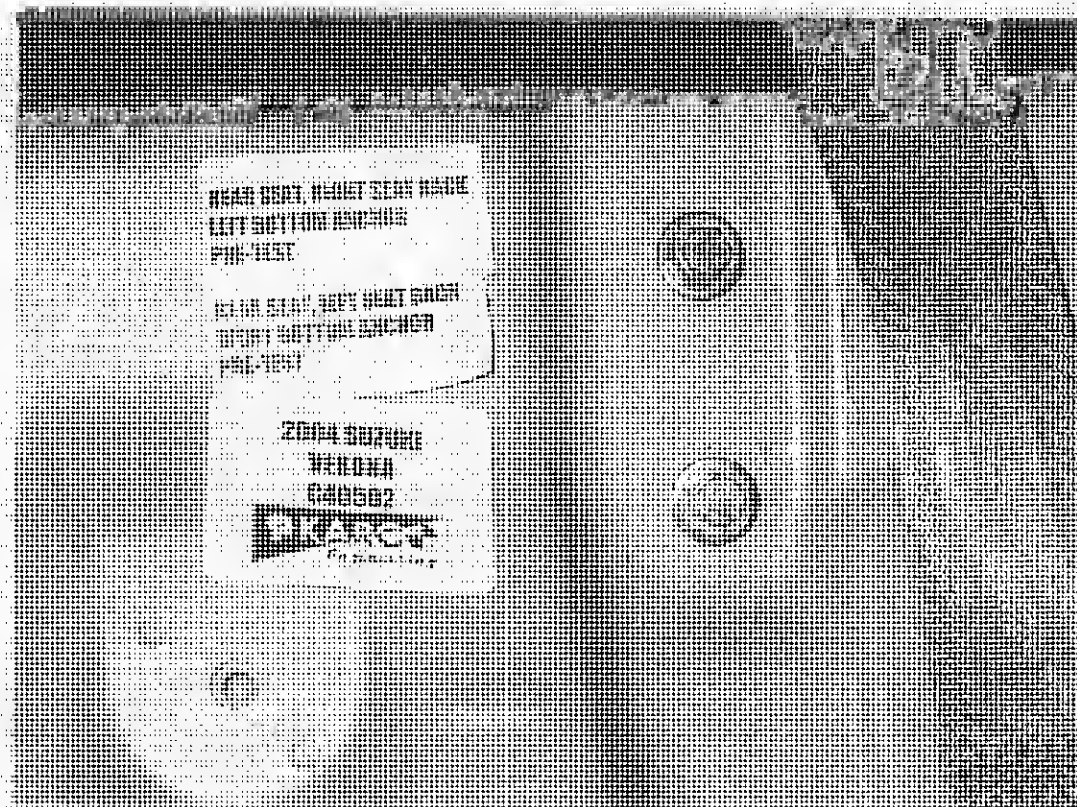


Figure A-98: Floor Pan Anchor, Rear Seat, Left Seat Back, Pre-Test

A-100

2004 Suzuki Verona
C405B2

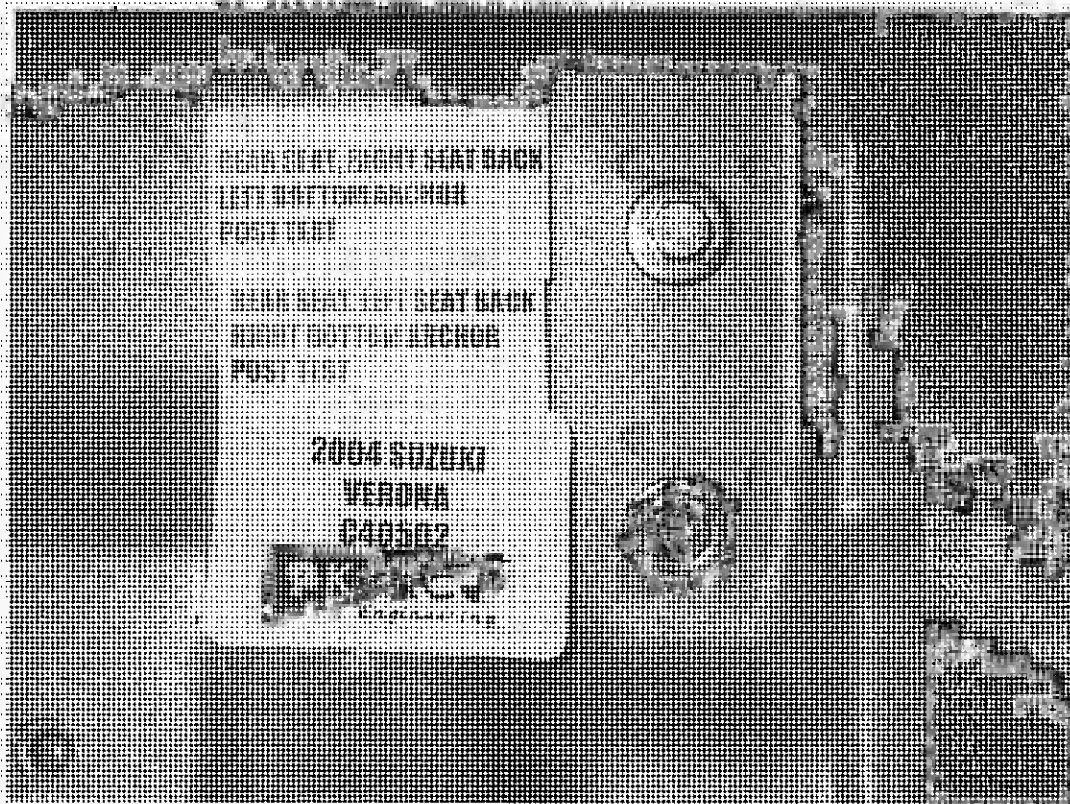


Figure A-100: Floor Pan Anchor, Rear Seat, Left Seat Back, Post-Test

A-101

2017-04-18-00-003

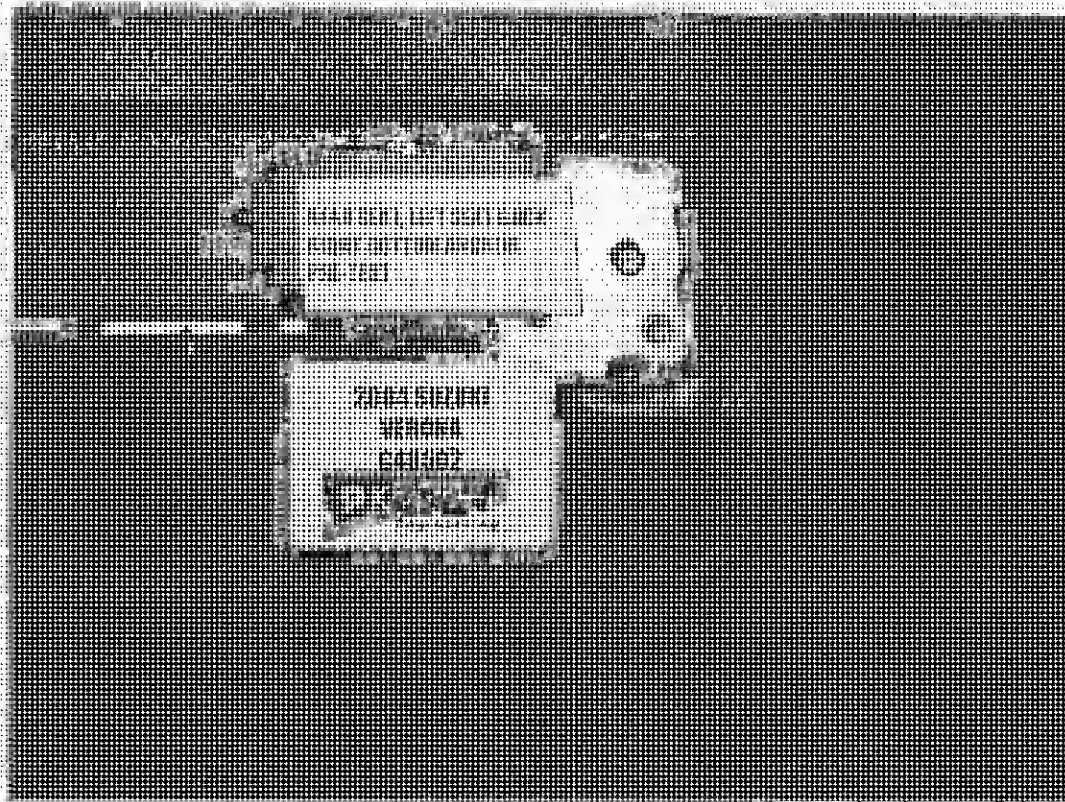


Figure A-101: Seat Anchor, Rear Seat, Left Seat Back, Pre-Test

A-102

2017-04-18-00-003

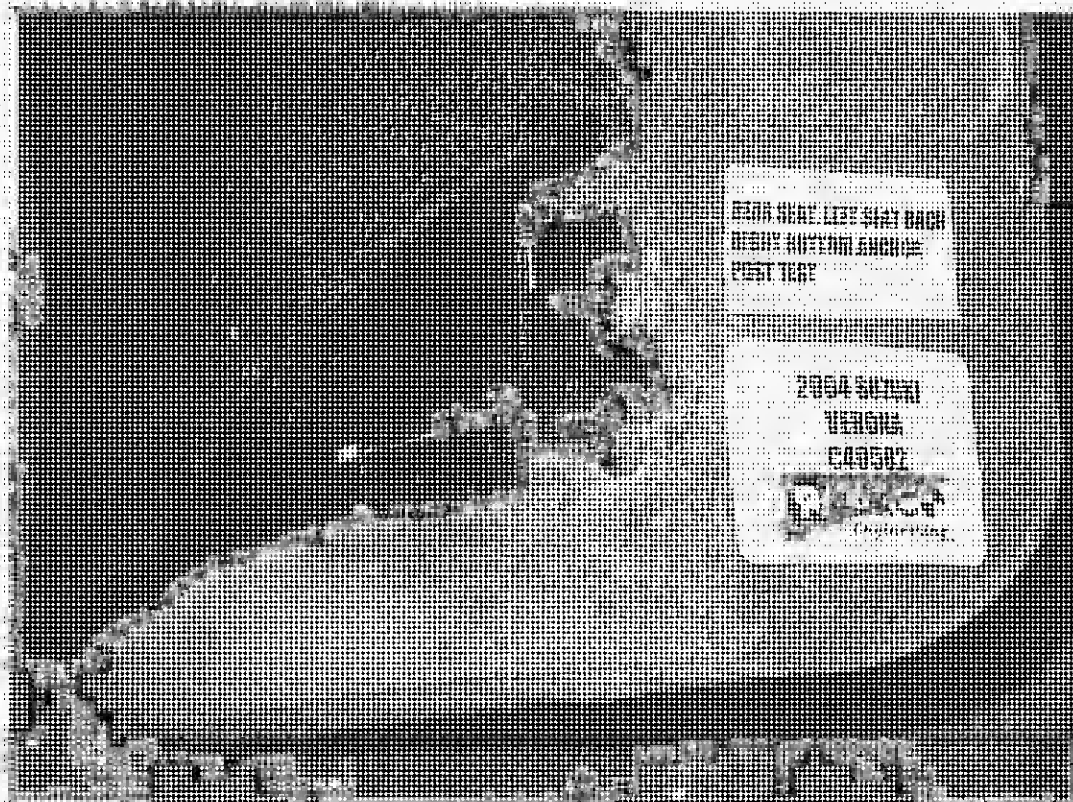


Figure A-102: Seat Anchor, Rear Seat, Left Seat Back, Post-Test

A-103

2015-03-04-005

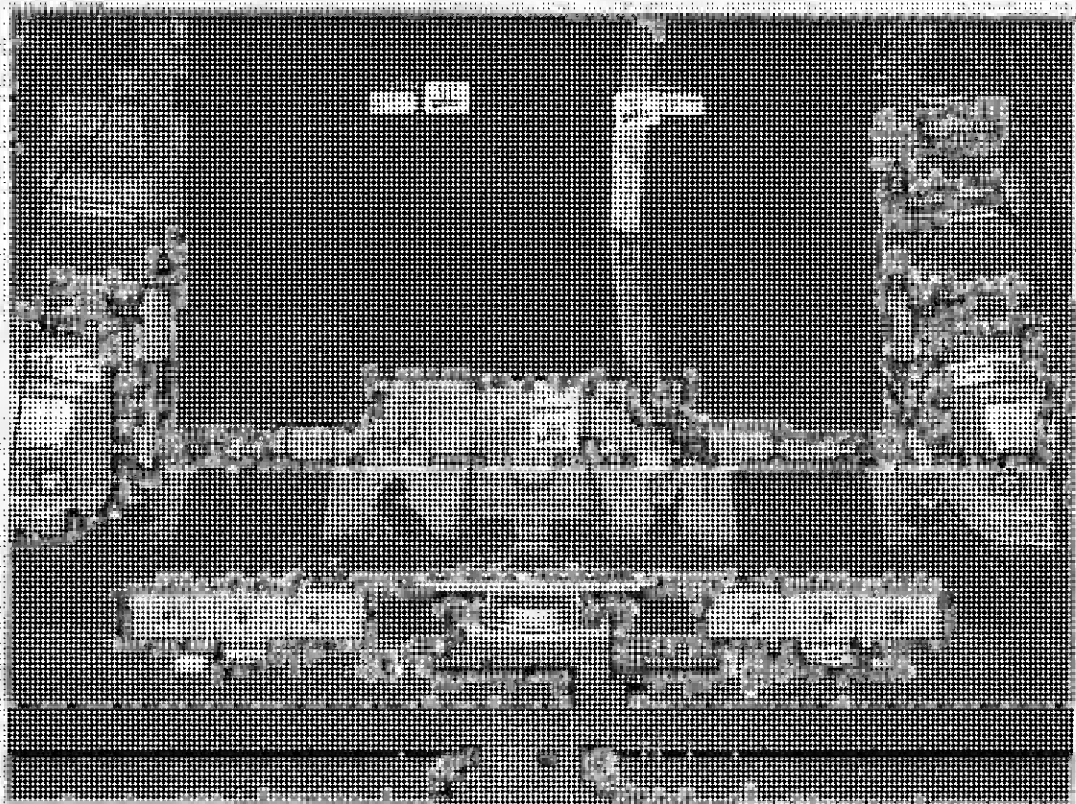


Figure A-103: Floor Plan Anchors, Rear Sect. Right East Back Overall: Pre-Test

A-104

2015-03-04-006

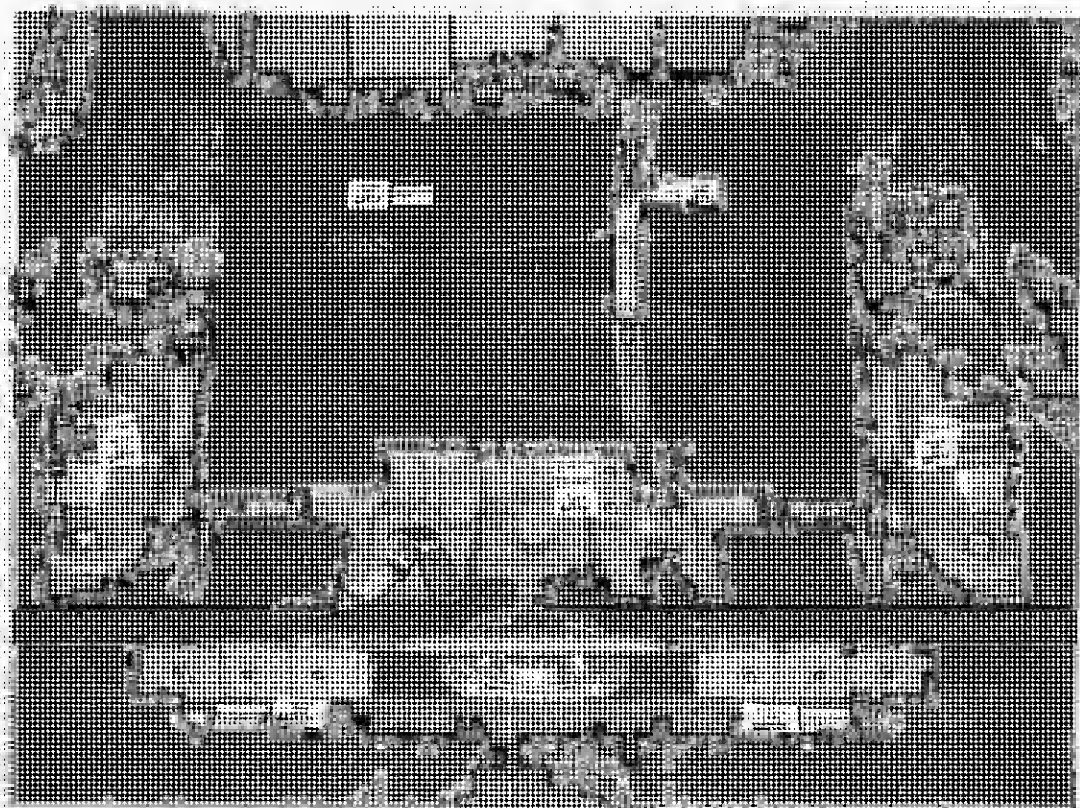


Figure A-104: Floor Plan Anchors, Rear Sect. Right East Back Overall: Post-Test

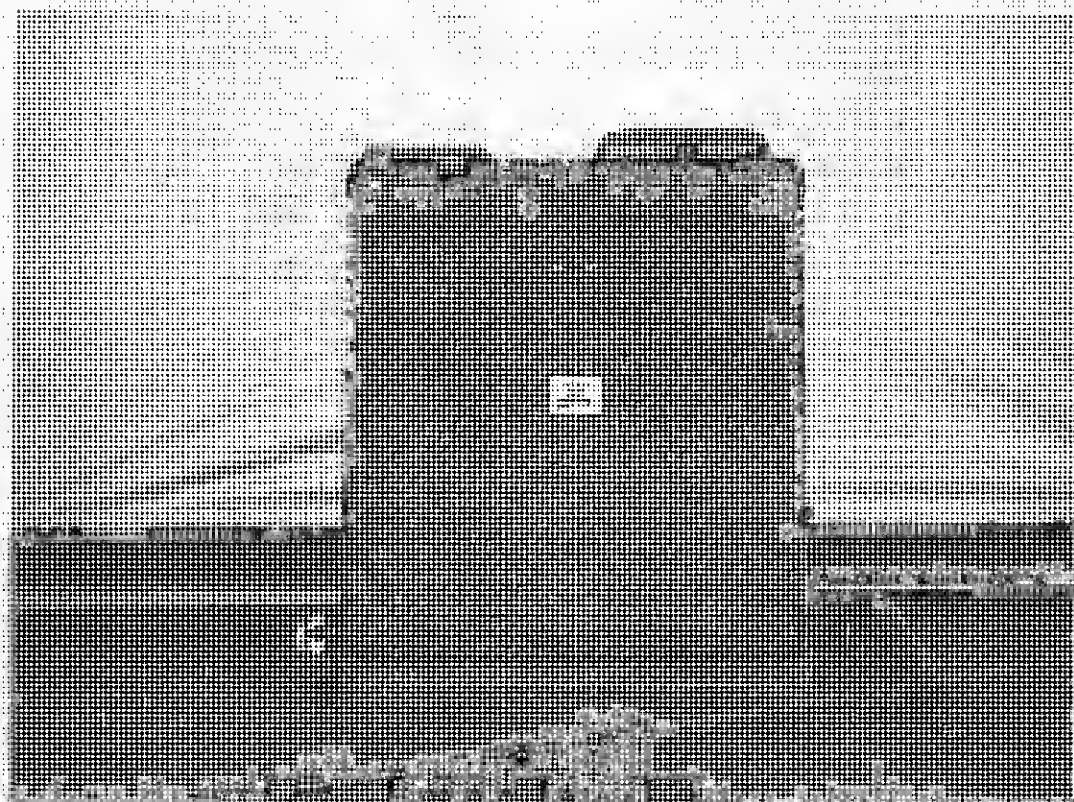


Figure A-105: Seat Anchors, Rear Seat, Right Seat Back Cover, Pre-Test

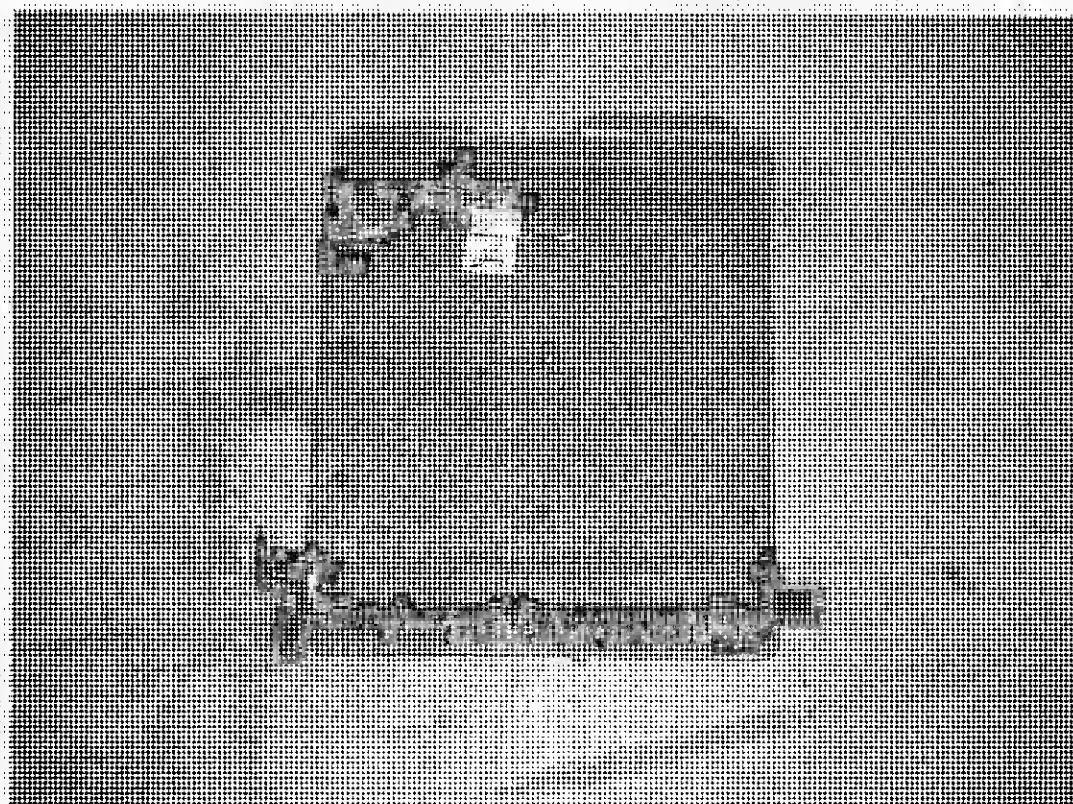


Figure A-106: Seat Anchors, Rear Seat, Right Seat Back Cover, Post-Test

4-107

2004/03/06-05

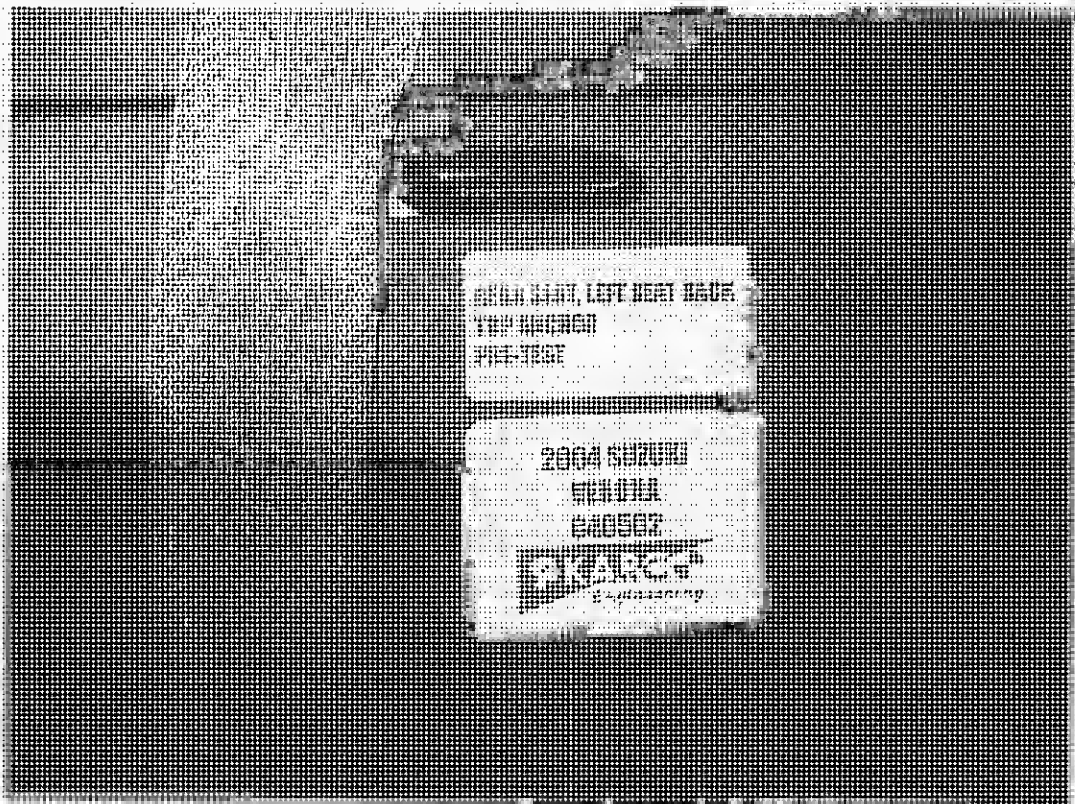


Figure A-107: Floor Pan Anchor, Rear Seat, Left Seat Back, Pre-Test

4-108

2004/03/06-05

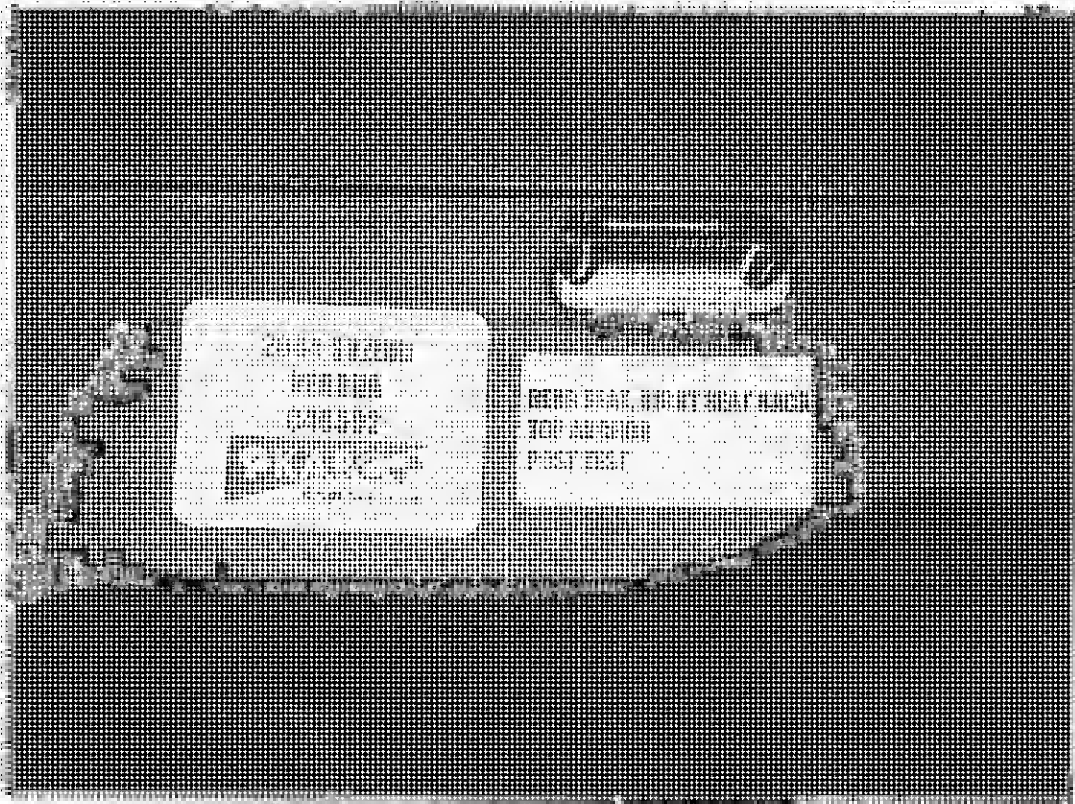


Figure A-108: Floor Pan Anchor, Rear Seat, Left Seat Back, Post-Test

A-109

2014-01-14-003

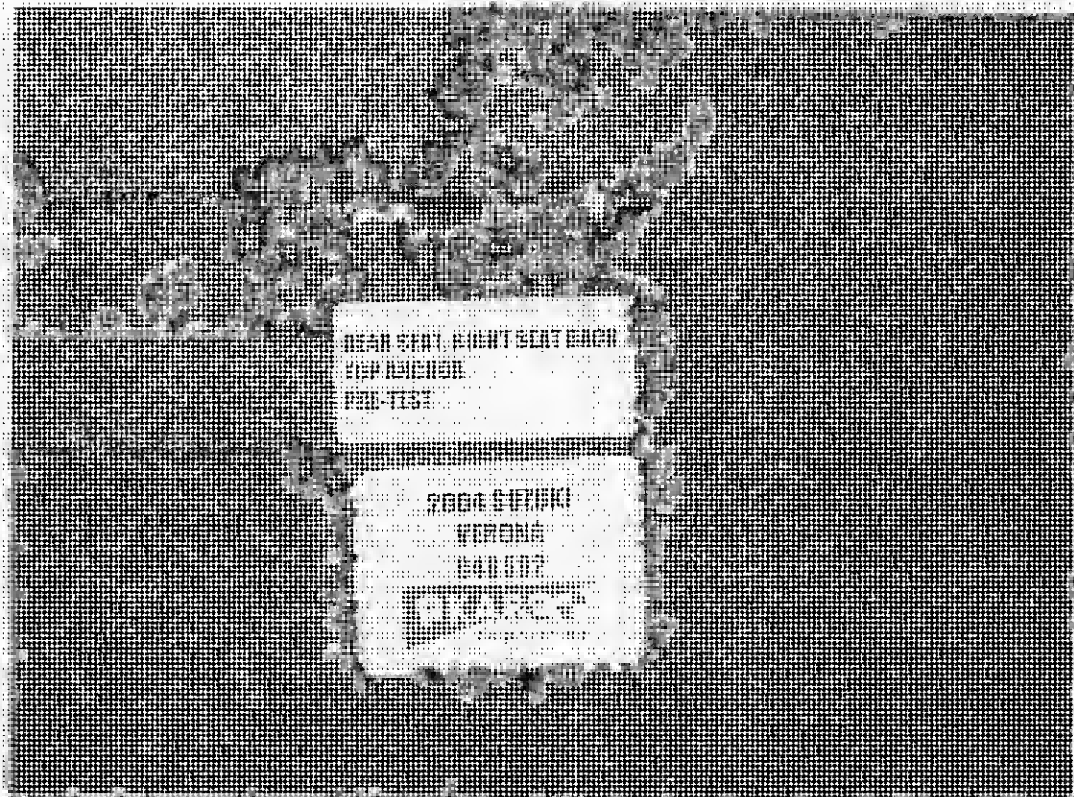


Figure A-109: Seat Anchor, Rear Seat, Right Seat Back, Post-Test

A-110

2014-01-14-003

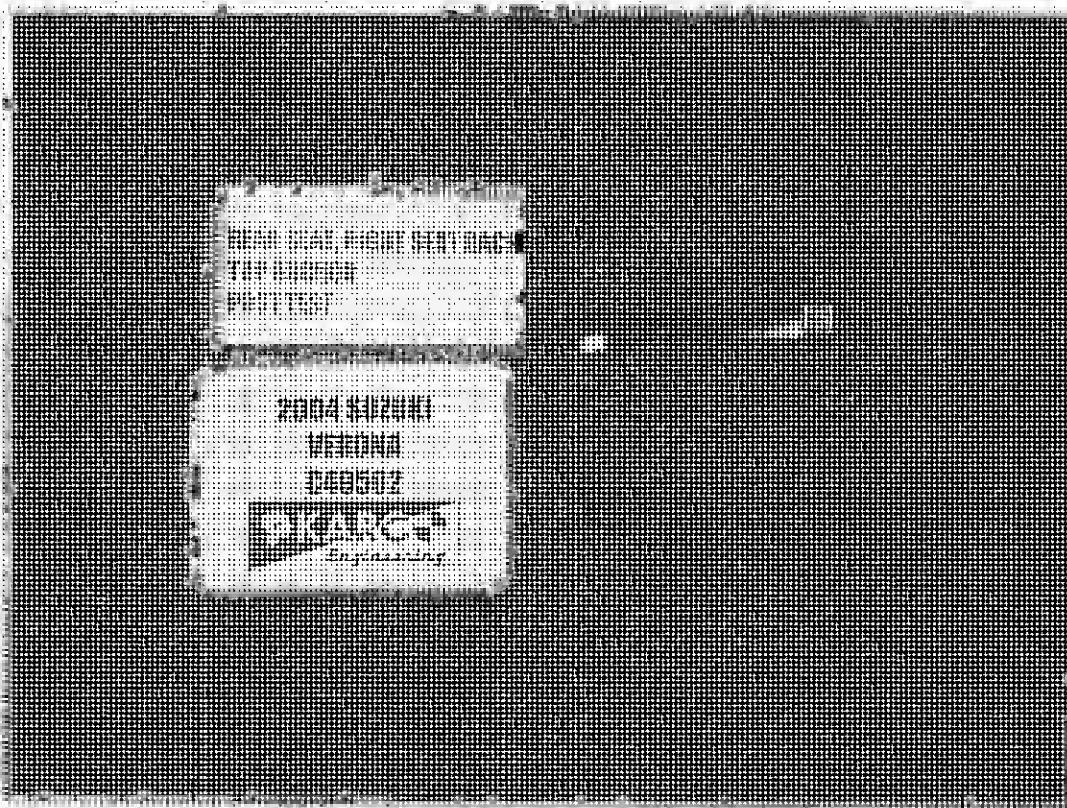


Figure A-110: Seat Anchor, Rear Seat, Right Seat Back, Post-Test

A-111

2014-05-14-40

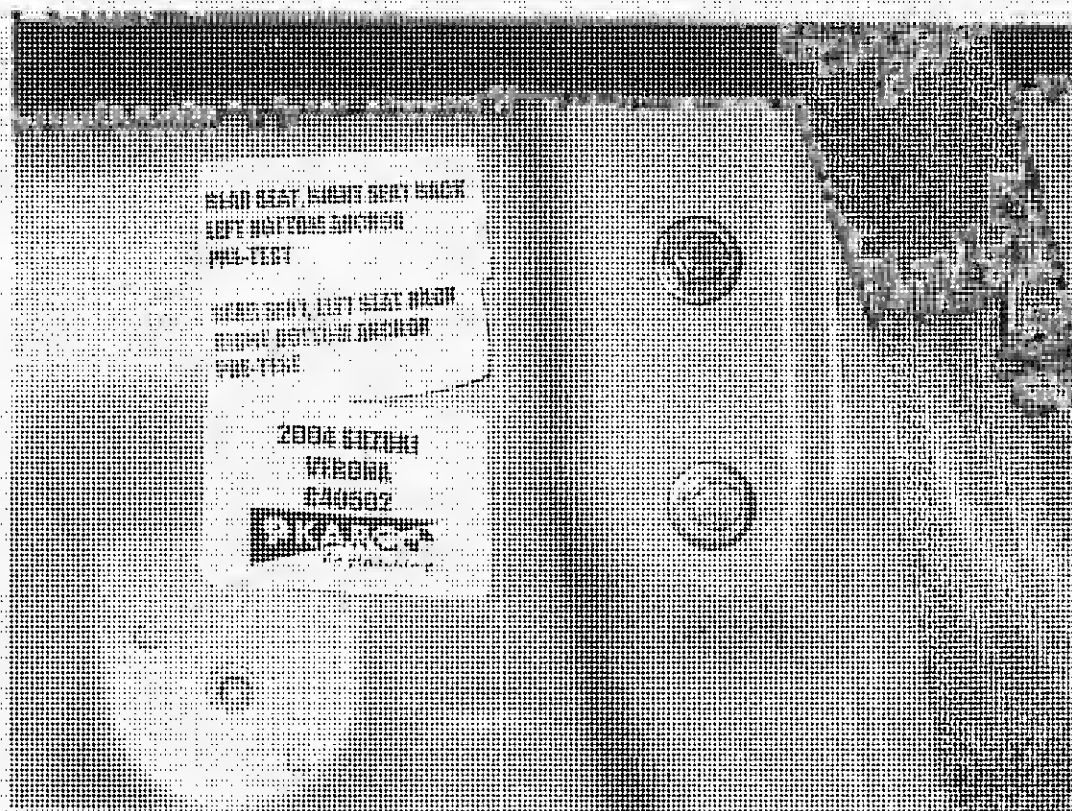


Figure A-110: Floor Pan Anchor, Rear Seat, Right Seat Back, Pre-Test

A-112

2014-05-14-40

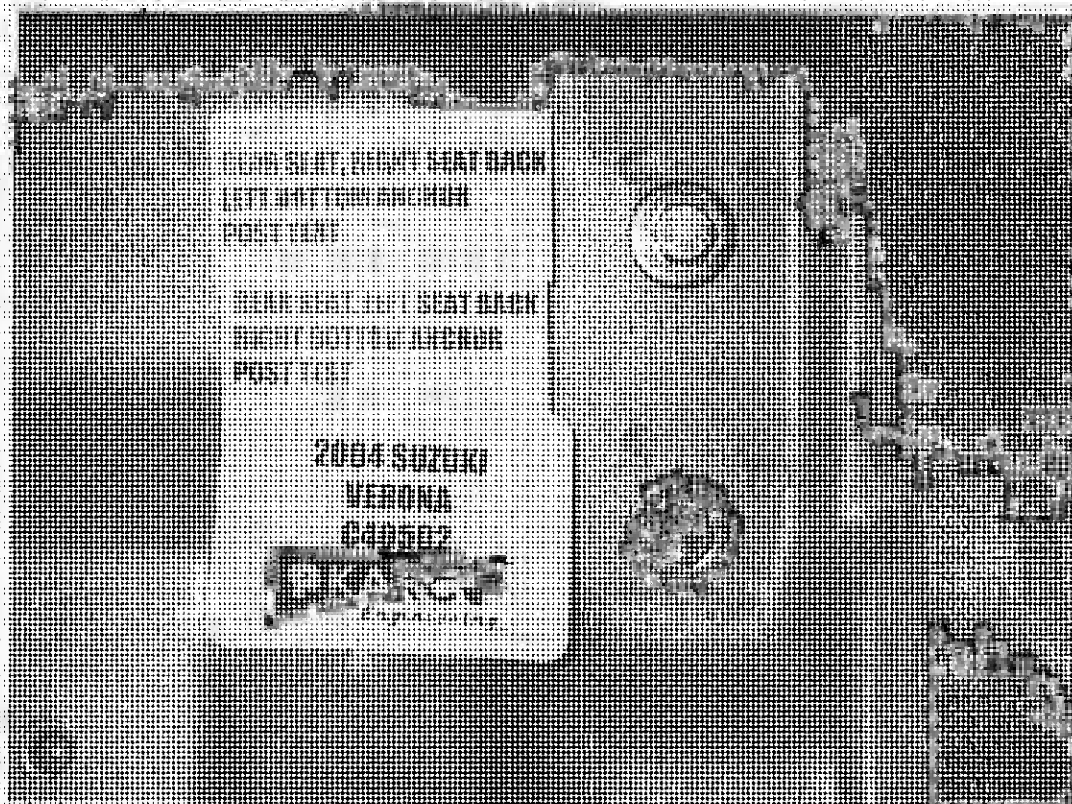


Figure A-112: Floor Pan Anchor, Rear Seat, Right Seat Back, Post-Test

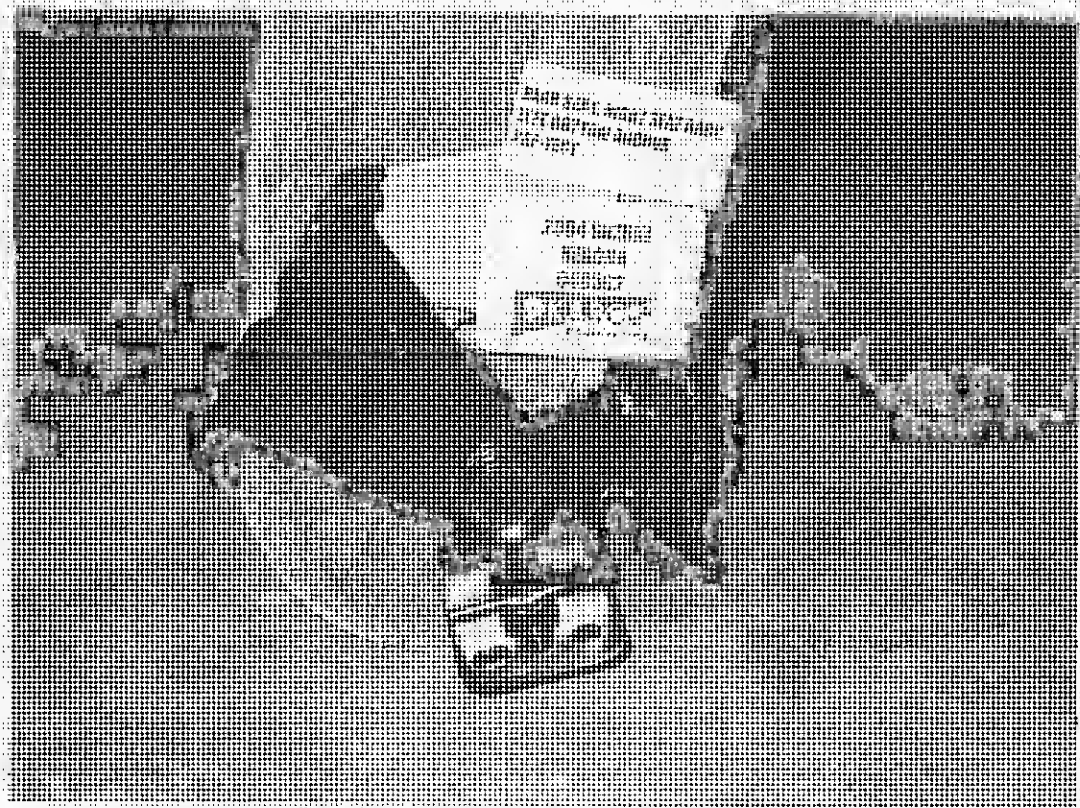


Figure A-113. Seat Anchor, Rear Seat, Right Seat Back, Pre-Test

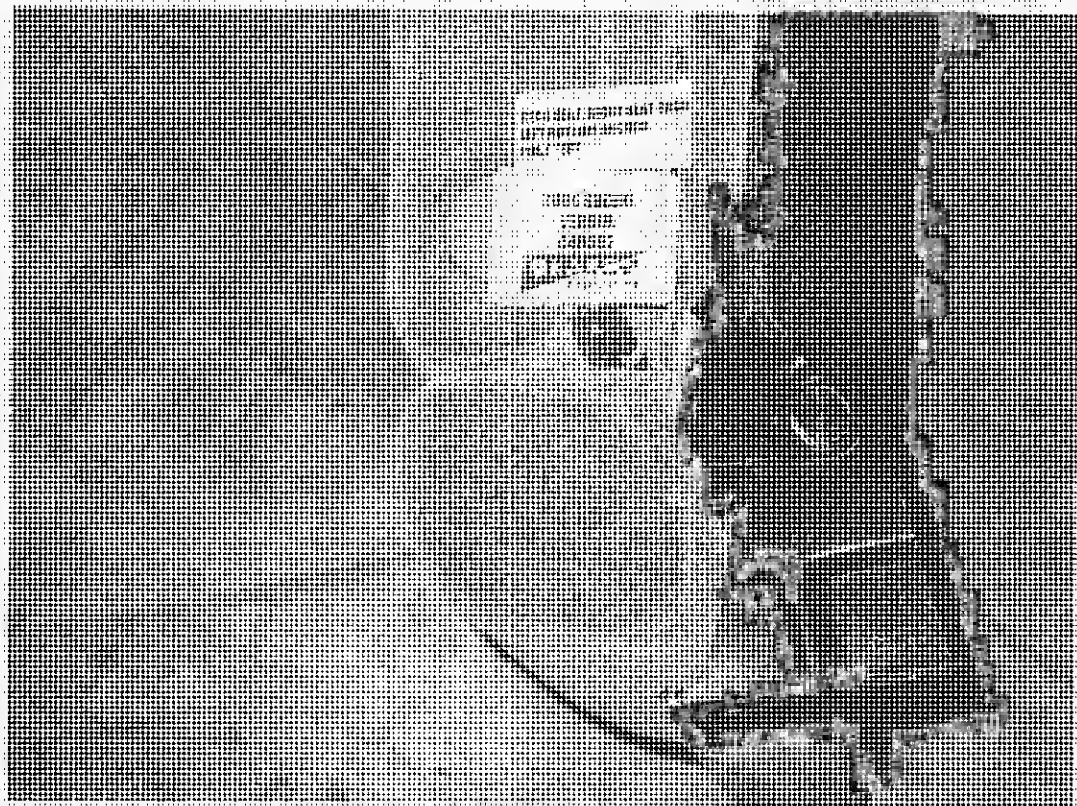


Figure A-114. Seat Anchor, Rear Seat, Right Seat Back, Post-Test

A-115

2014-01-05-0005

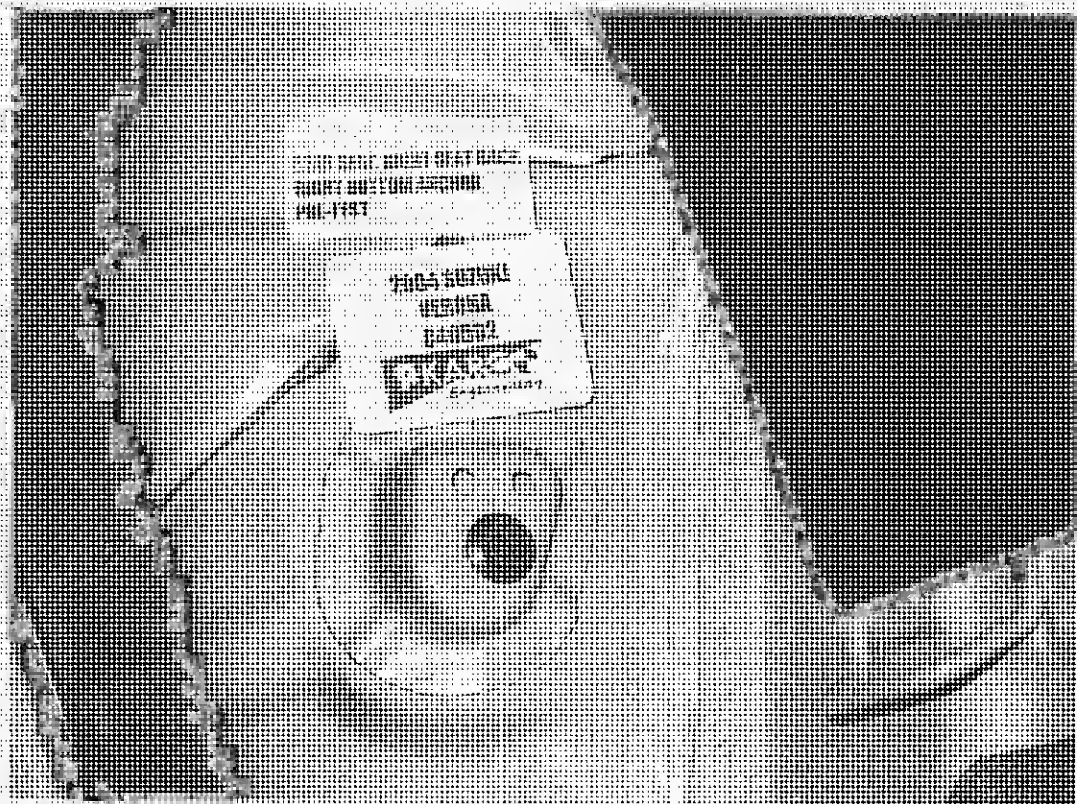


Figure A-115: Floor Pan Anchor, Rear Seat, Right Seat Back, Pre-Test

A-115

2014-01-05-0005

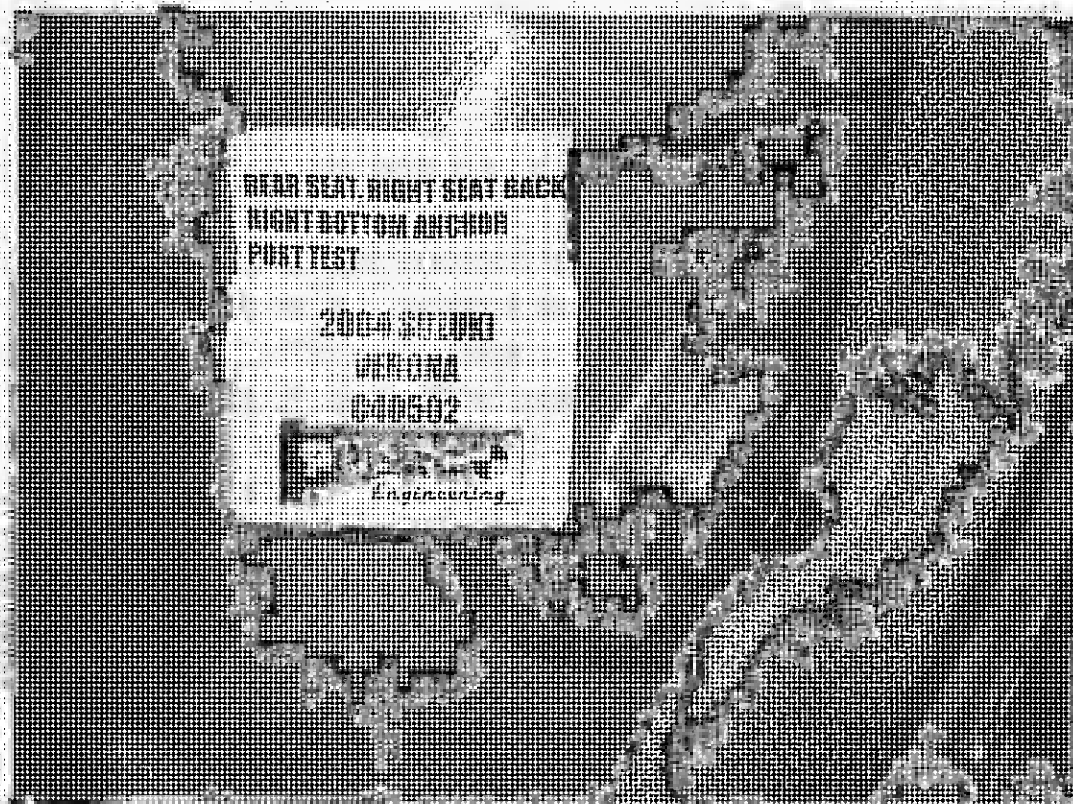


Figure A-116: Floor Pan Anchor, Rear Seat, Right Seat Back, Post-Test

A-117

2013-01-04-01

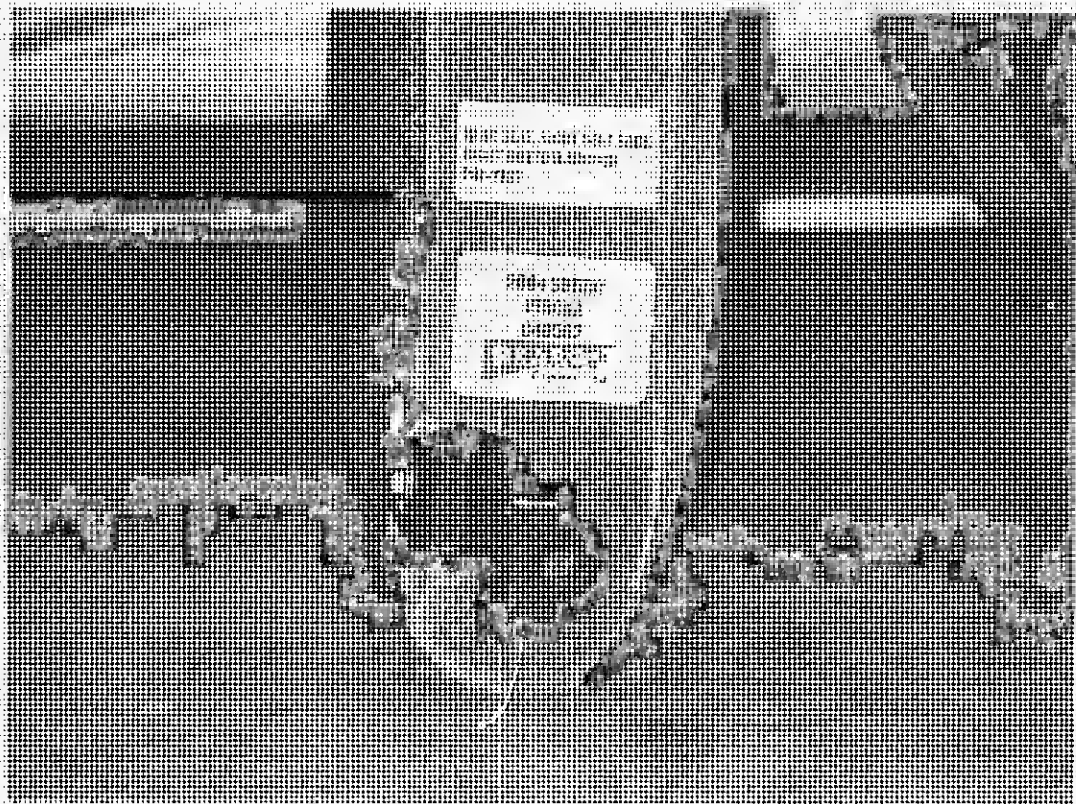


Figure A-117: Seat Anchor, Rear Seat, Right Seat Back, Pre-Test

A-118

2013-01-04-01

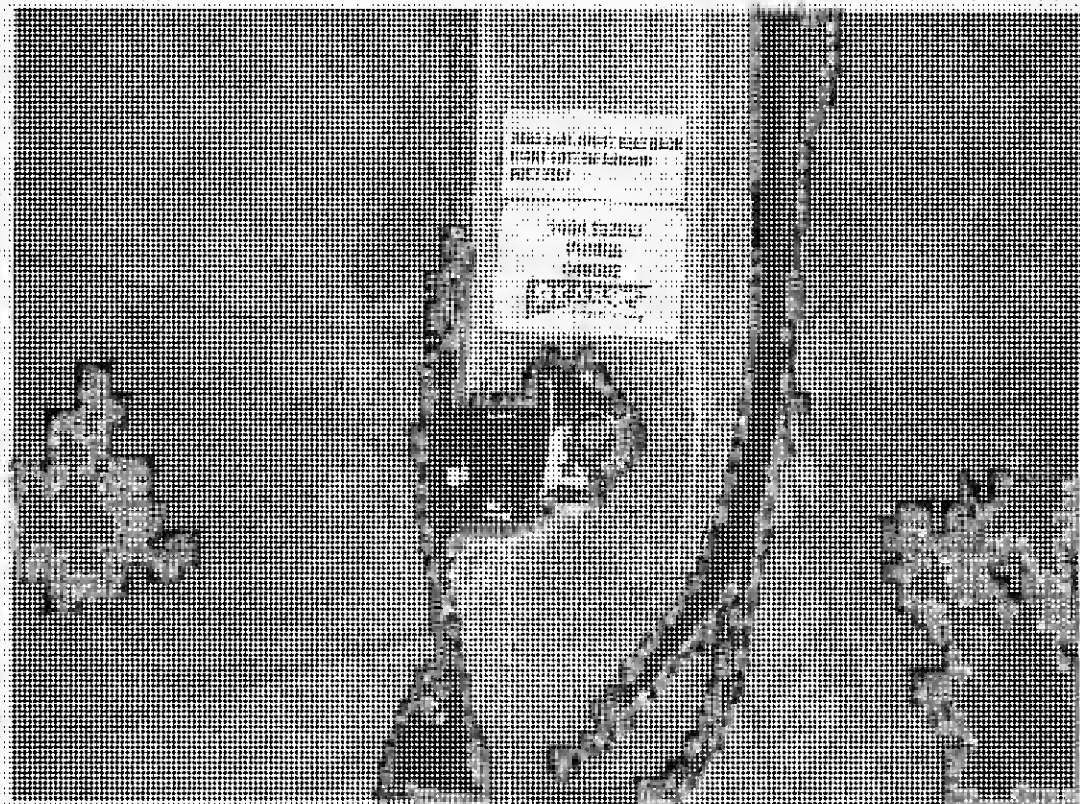
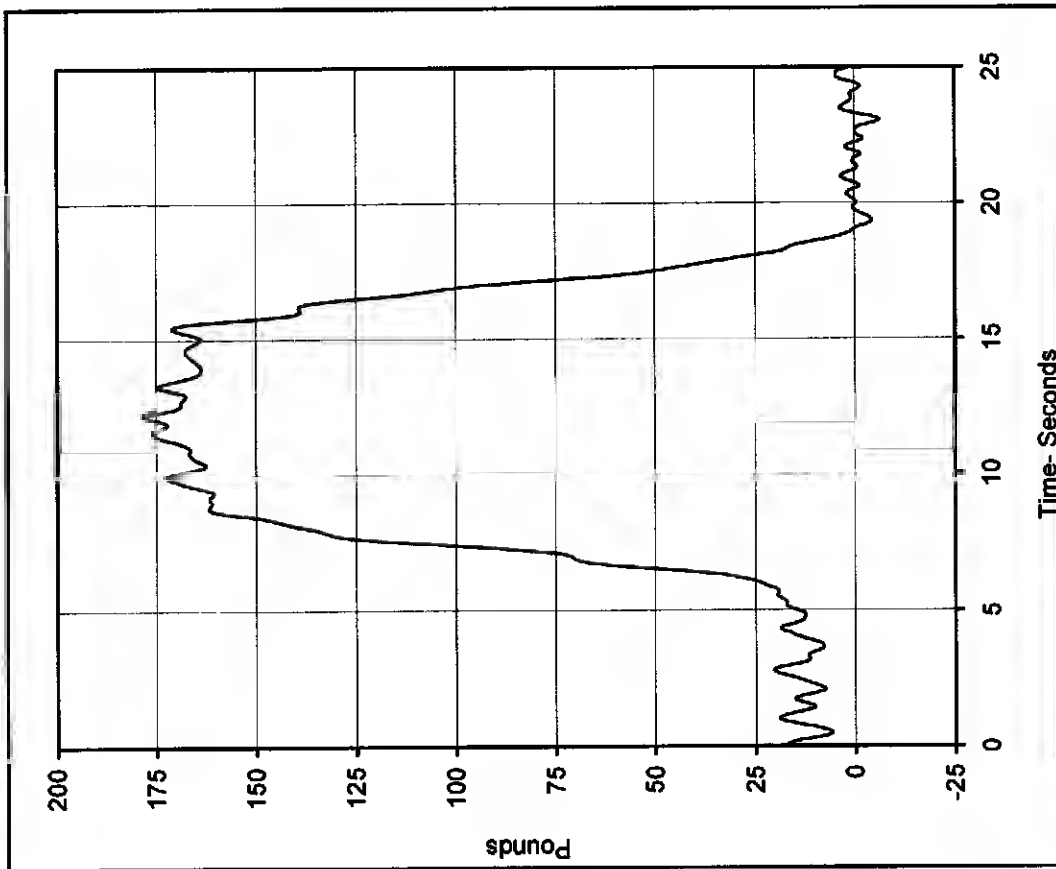


Figure A-118: Seat Anchor, Rear Seat, Right Seat Back, Post-Test

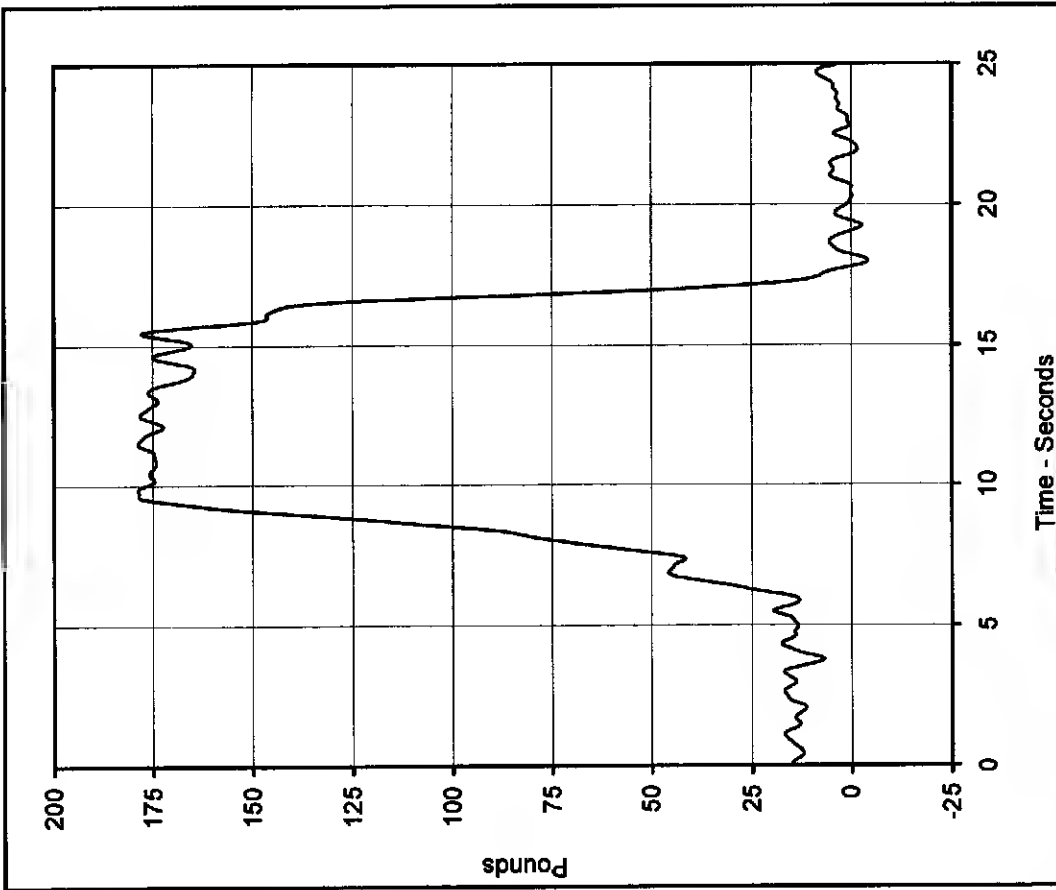
APPENDIX B
DATA PLOTS



Curve Description		CURNO	Type
Driver AFT Moment Load		001	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	178.4	12.2	-6.2	23.1	1

Test Program: FMVSS 207 Aft Moment (Front)
 Test Vehicle: 2004 Suzuki Verona 4 Door Sedan

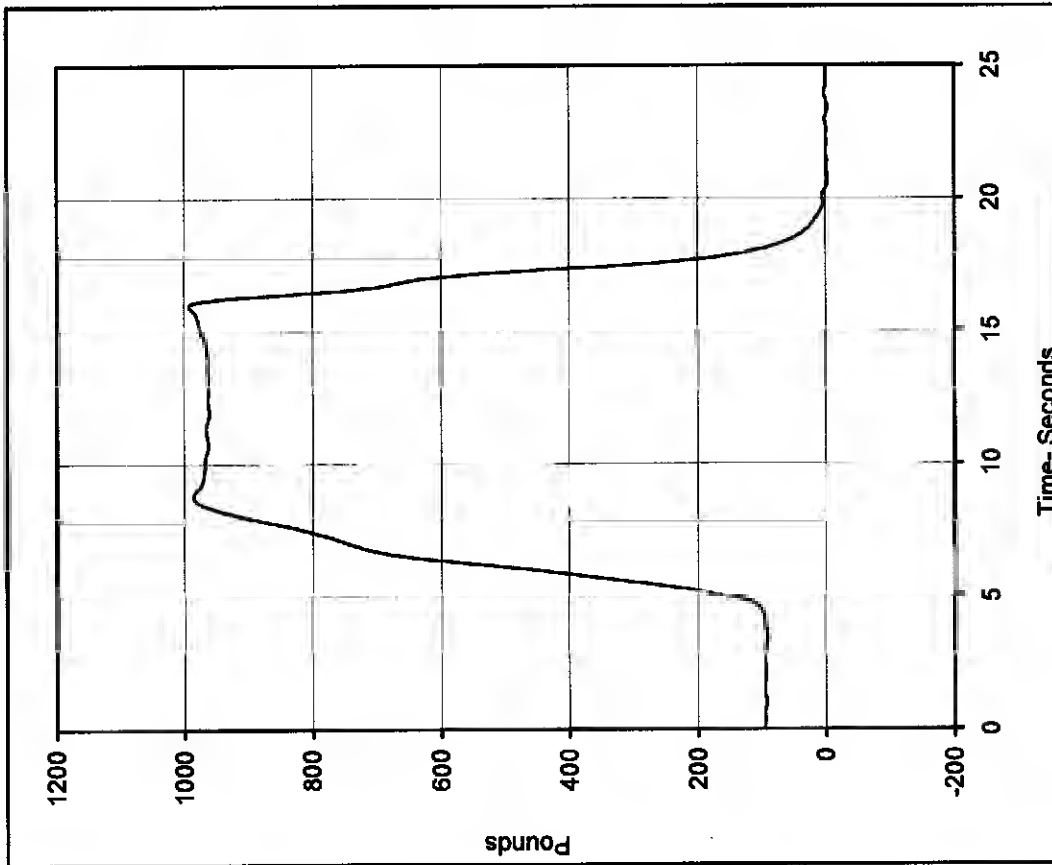


Curve Description		CURNO	Type
Pass. AFT Moment Load		002	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	178.8	11.5	-4.2	18.0	1

Test Date: 7/1/04
 Project No.: C40502

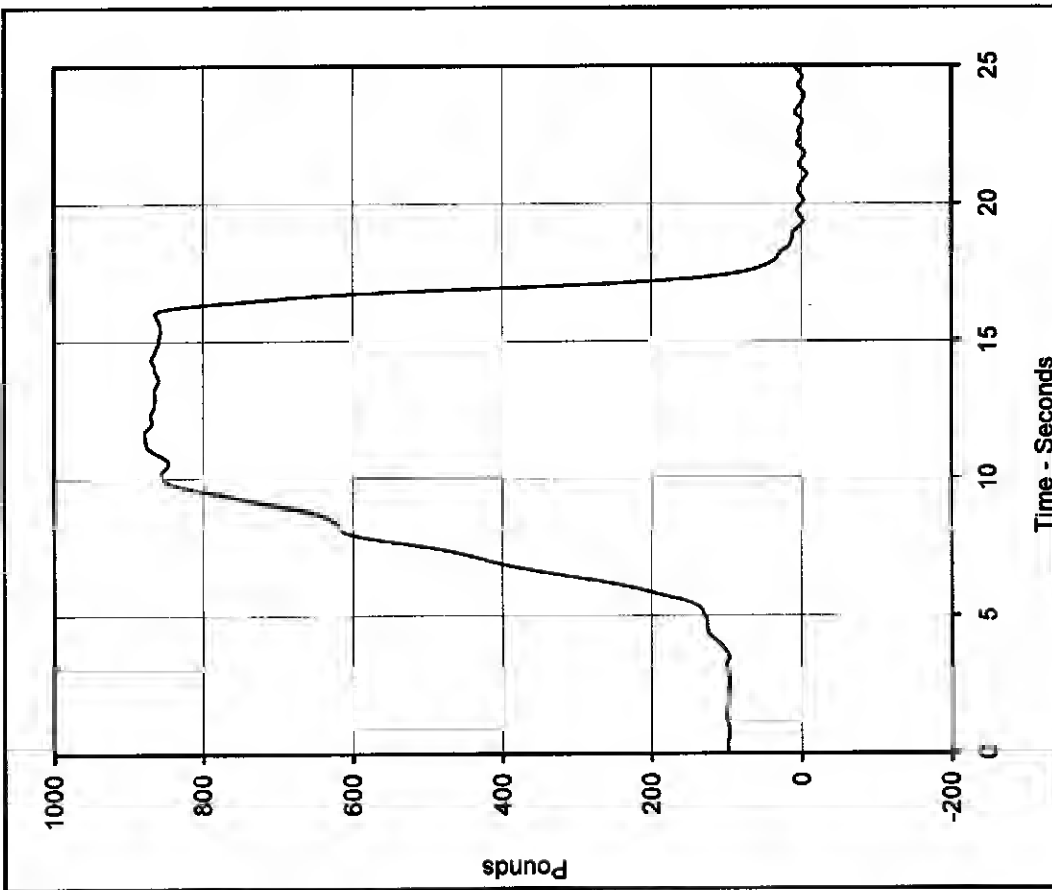




Curve Description		CURNO		Type	
Driver Seat		001		FIL	

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	992.9	16.0	-2.9	20.8	1

Test Program: FMVSS 207 Aft Seat Frame and Adjusters (Front)
 Test Vehicle: 2004 Suzuki Verona 4 Door Sedan

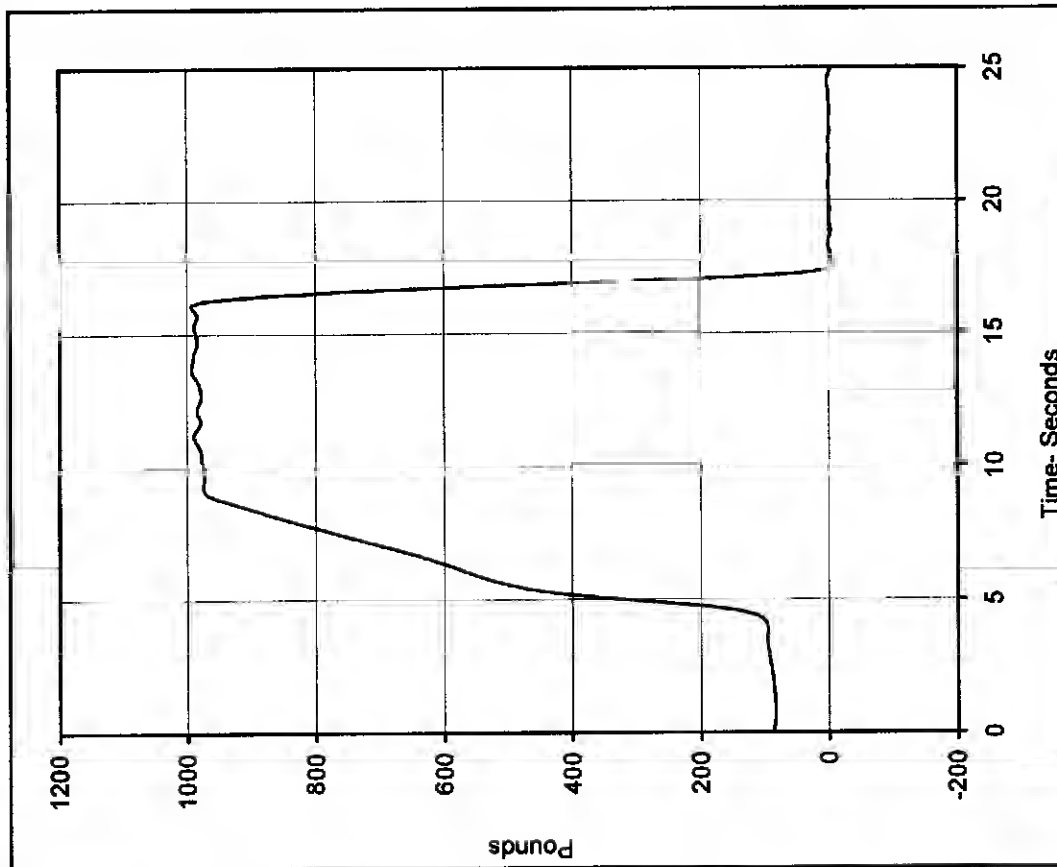


Curve Description		CURNO		Type	
Pass. Seat		002		FIL	

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	877.9	11.7	-6.9	21.1	1

Test Date: 7/1/04
 Project No.: C40502

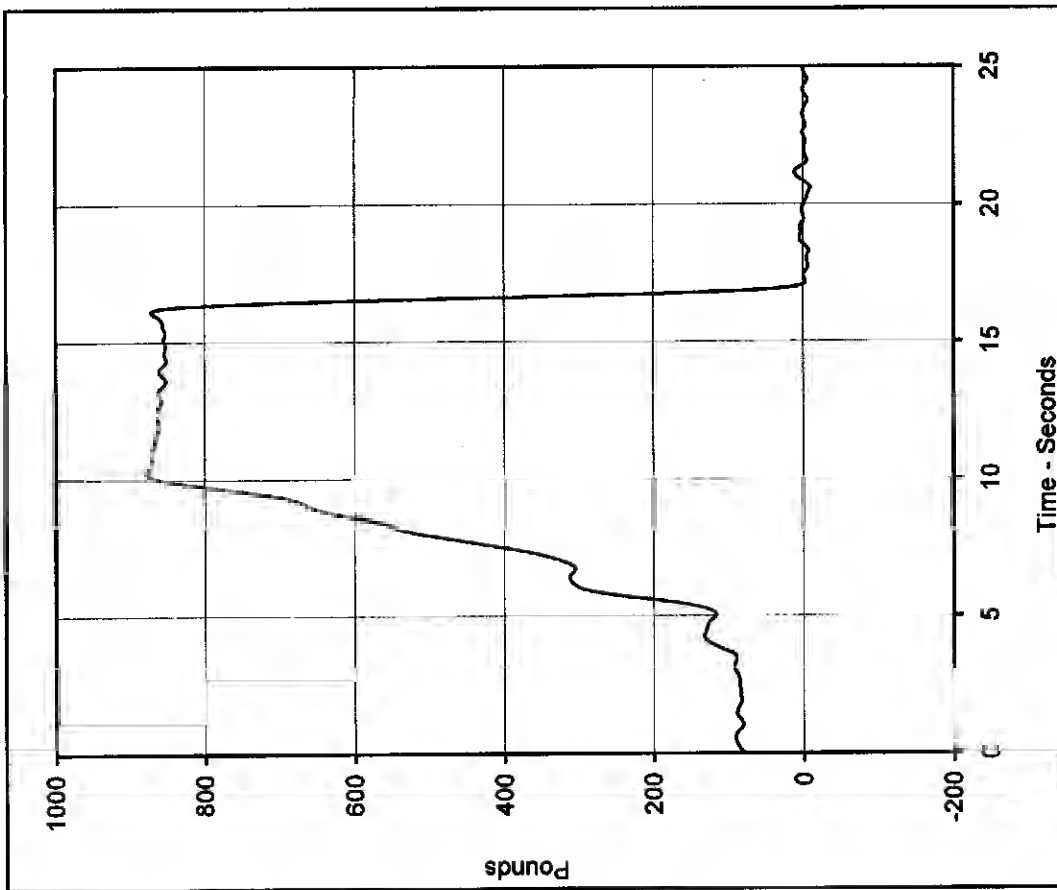




Curve Description	CURNO	Type
Driver Seat	001	FIL

Units	Max	Time	Min	Filter (Hz)
Pounds	993.3	16.1	-5.5	1

Test Program: FMVSS 207 Fwd Seat Frame and Adjusters (Front)
 Test Vehicle: 2004 Suzuki Verona 4 Door Sedan

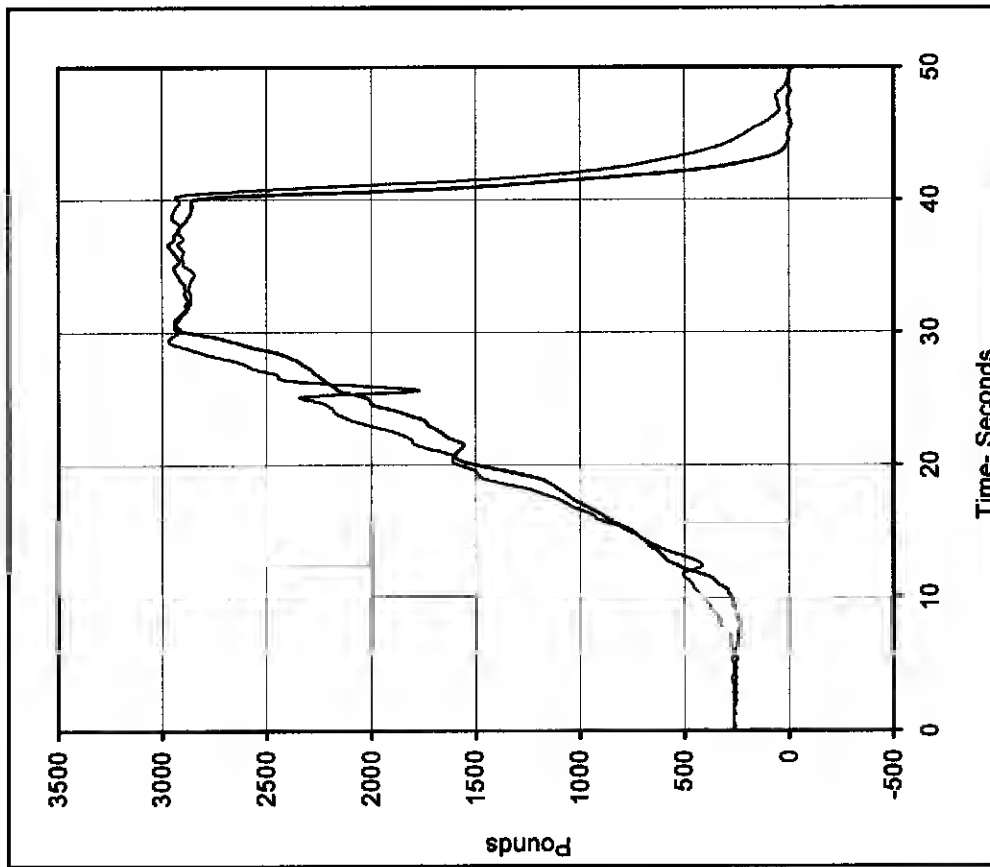


Curve Description	CURNO	Type
Pass. Seat	002	FIL

Units	Max	Time	Min	Filter (Hz)
Pounds	877.5	10.2	-9.3	1

Test Date: 7/1/04
 Project No.: C40502

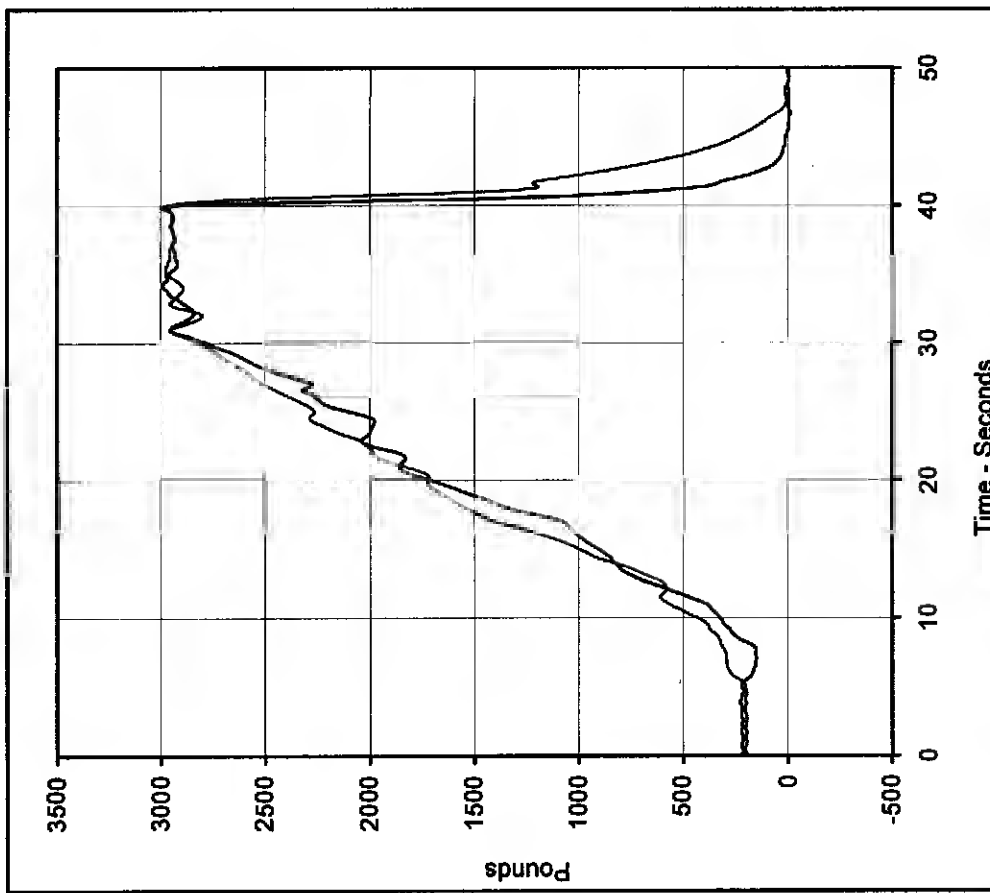




Curve Description	CURNO	Type
Driver Lap	001	FIL
Driver Shoulder	002	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	2969.6	36.6	-11.6	45.7	1
Pounds	2967.2	29.4	-12.4	50.0	1

Test Program: FMVSS 207/210 Front Seats
 Test Vehicle: 2004 Suzuki Verona 4 Door Sedan

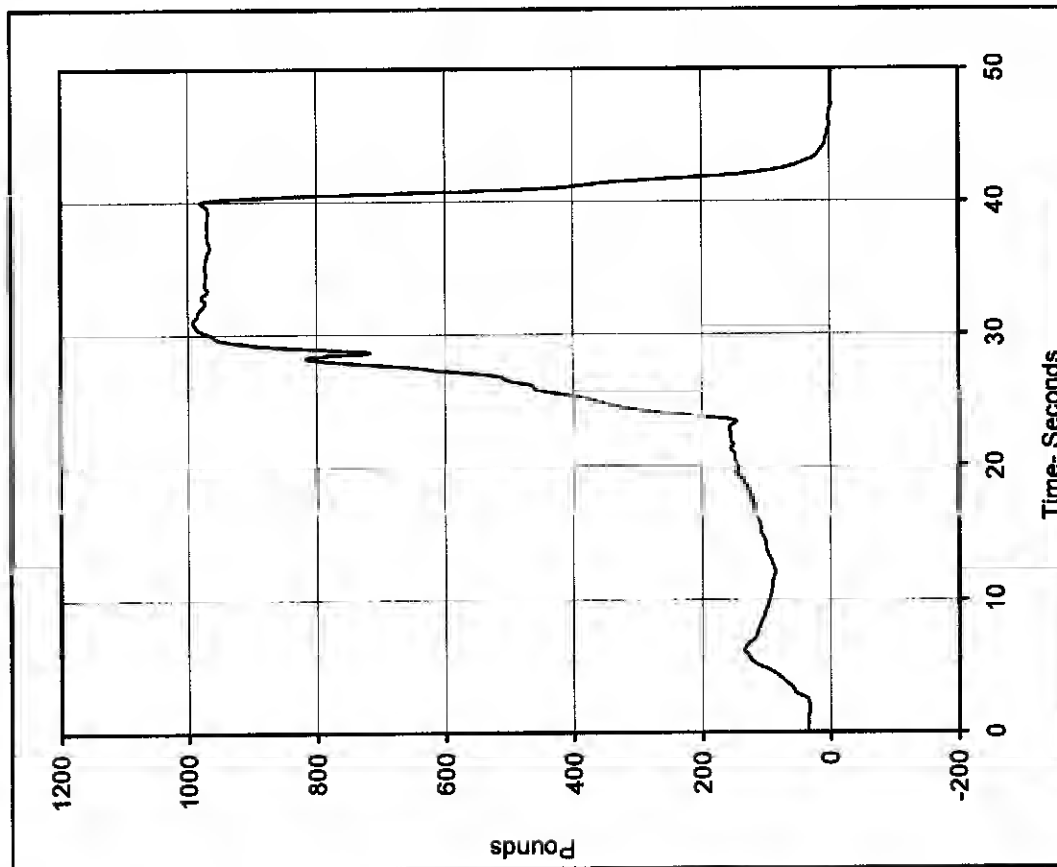


Curve Description	CURNO	Type
Pass. Lap	004	FIL
Pass. Shoulder	005	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	2996.4	39.9	-13.7	46.8	1
Pounds	2976.3	35.3	-2.9	49.1	1

Test Date: 7/2/04
 Project No.: C40502

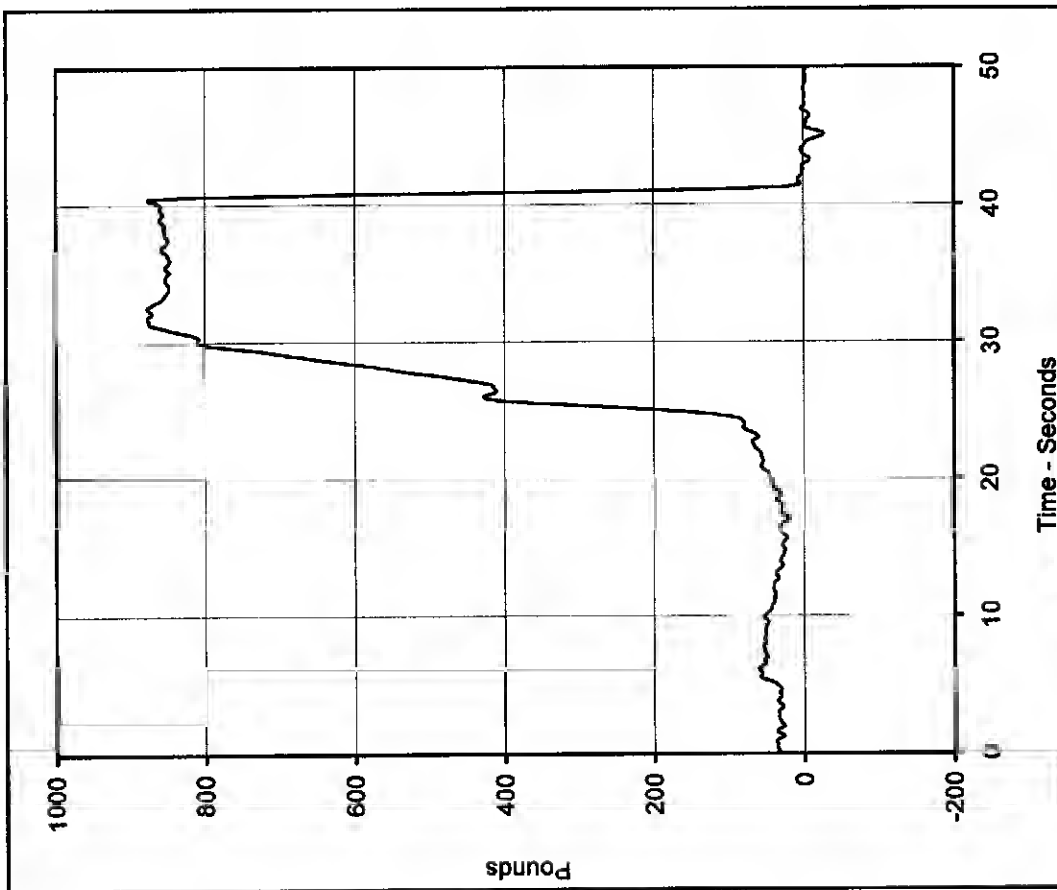




Curve Description	CURNO	Type
Driver Seat	003	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	992.6	31.0	-3.9	50.0	1

Test Program: FMVSS 207/210 Front Seats
 Test Vehicle: 2004 Suzuki Verona 4 Door Sedan

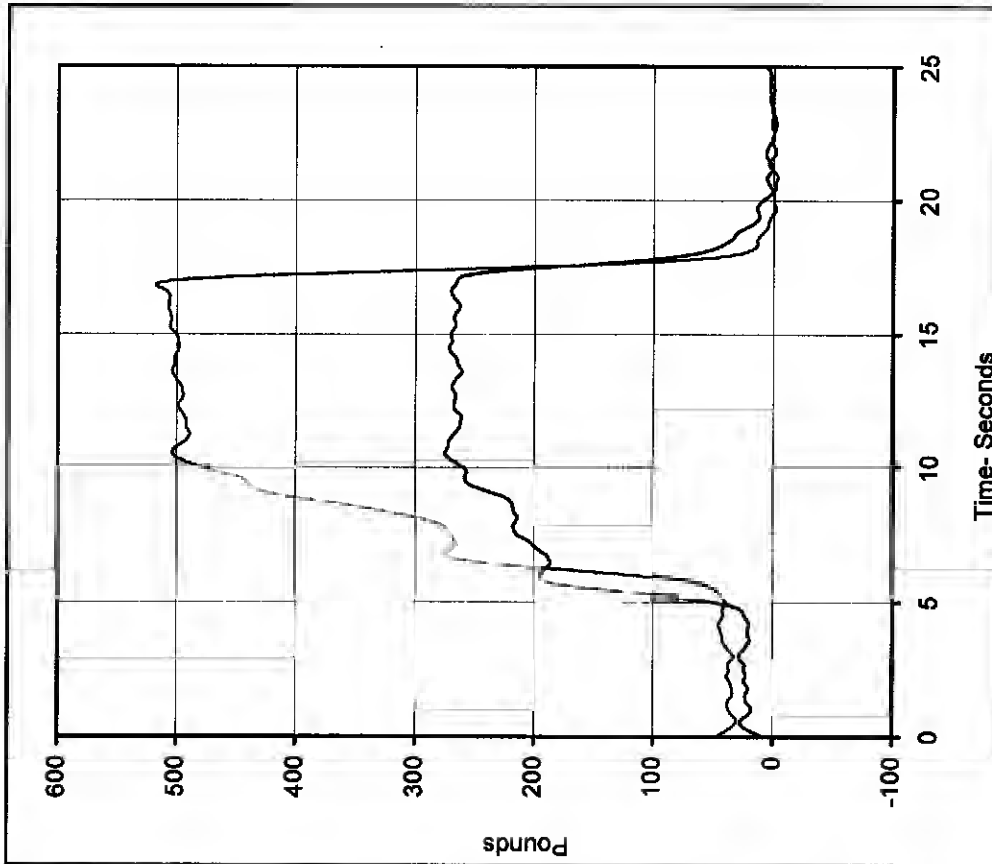


Curve Description	CURNO	Type
Pass. Seat	006	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	877.1	32.6	-27.2	45.1	1

Test Date: 7/2/04
 Project No.: C40502

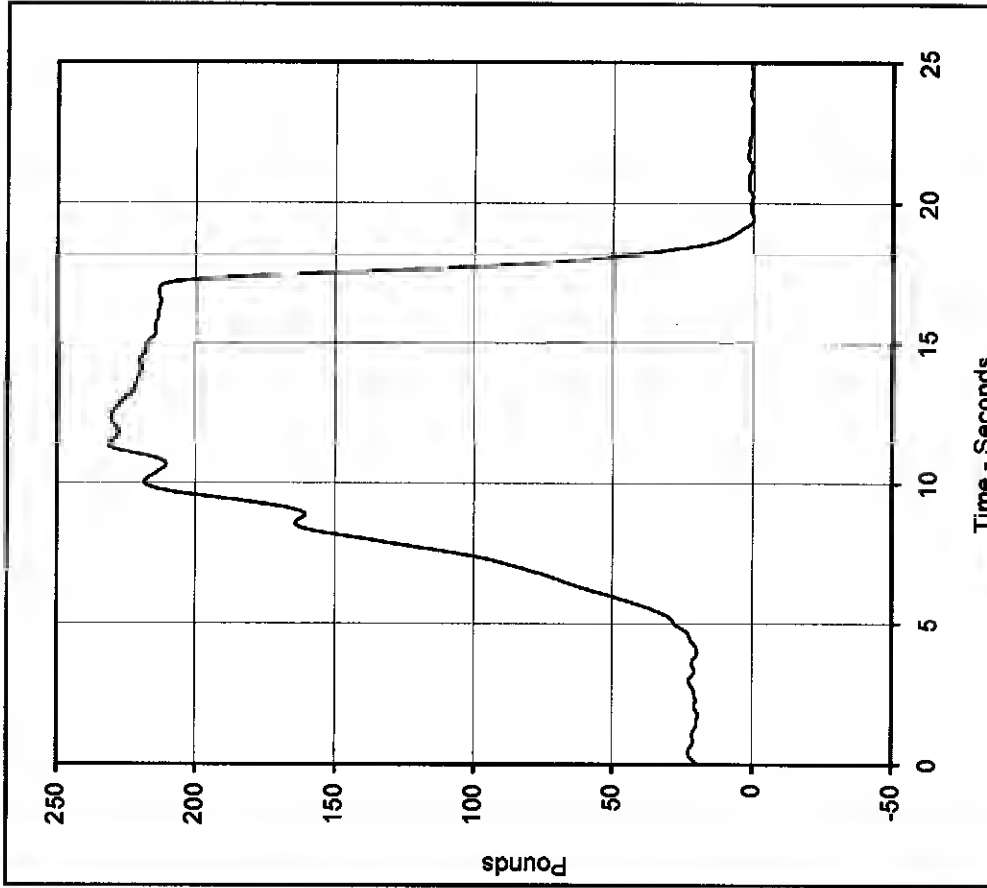




Curve Description	CURNO	Type
Left Rear Seat Back	001	FIL
Right. Rear Seat Back	002	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	275.1	10.6	-2.1	20.9	1
Pounds	517.2	16.9	-3.2	20.9	1

Test Program: FMVSS 207 Fwd Seat Back & Cushion (Rear)
 Test Vehicle: 2004 Suzuki Verona 4 Door Sedan



Curve Description	CURNO	Type
Rear Seat Cushion	004	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	231.6	11.4	-0.1	19.5	1

Test Date: 7/2/04
 Project No.: C40502



APPENDIX C
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

FMVSS 207
Test Equipment List
7/1/04

2004 Suzuki Verona 4 Door Sedan

Description	Manufacturer	Model No.	Serial No.	Limit	Accuracy	Cal. Date	Due Cal.
Hydraulic Pump	Lincoln	T-3825-C	2460952	8 gpm @ 2700 psi			
Computer	Panasonic	CF-71	8IMAA01852	N/A	N/A	N/A	N/A
TDAS	DTS	TDAS	DM0103	N/A	SAE J211	11/15/03	11/14/04
Load Cell	Lebow	3108	1001	300 LB	± 1.0%	5/20/04	11/18/04
Load Cell	Lebow	3132	622	500LB	± 1.0%	5/20/04	11/18/04
Load Cell	BLH	U3G1	49296	3K	± 1.0%	5/22/04	11/20/04
Load Cell	BLH	U-1C	N873	6K	± 1.0%	5/20/04	11/18/04
Load Cell	BLH	U-1C	11139	12K	± 1.0%	5/20/04	11/18/04
Load Cell	Alinco	342-E	22438-B	10K	± 1.0%	5/22/04	11/20/04
Load Cell	Alinco	342-E	22440-A	10K	± 1.0%	5/22/04	11/20/04
Load Cell	BLH	U3G1	81711A	10K	± 1.0%	5/22/04	11/20/04

